THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway, New York.)
Entered at the Post-Office of New York, N. Y., as Second-Class Mail Matter.

VOL. LXV. JUNE 25. No. 26.

RICHARD P. ROTHWELL, C. E M. E., Editor.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
SOPHIA BRAEUNLICH, Business Manager.
THE SCIENTIFIC PUBLISHING CO., Publishers.

Subscriptions are PAYABLE IN ADVANCE For the United States, Mexico and Canada, $5 per annum: all other countries in the Postal Union, $7.
When change of address is desired, both old and new address should be sent.
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Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.

New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.)
London Cable Address—"PULCINETTO."

Branch Offices: Chicago, Ill., Monadnock Building, Room 737.
Denver, Colo., Boston Building, Room 206.
Salt Lake City, Utah, Walker Bank Building.
San Francisco, Cal., 207 Montgomery Street.

London Eng., Office, 20 Bucklersbury, 366 & 367. E. Walker, Manager

English subscriptions to the JOURNAL may be paid at the London office at the rate of $7 = £1 8s 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s, 2d. to the dollar, net.

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We begin this week the publication of the daily prices of copper, tin, lead and spelter in the same form in which we have long given the daily prices of silver. This is in addition to our regular market report, and will, we believe, be very convenient for reference to those who are interested in the metal markets, and especially to those who depend upon our quotations as the basis of their contracts for ores. These daily prices represent as nearly as possible the average of actual bona fide transactions. In our review for the week the prices quoted are not necessarily the exact average of the daily quotations, but take closer account of the importance of the transactions, and represent perhaps even more correctly the average condition of the market throughout the week, all things being fairly considered.

The combination of Ohio and Pennsylvania furnaces making Bessemer pig is carrying out its plan of restricting production, but so far without much effect on prices. There is not much in favor of the combination, when all the circumstances are taken into account, and its future is doubtful. The larger companies have generally followed the plan of controlling their own supplies of pig iron and others are preparing to follow their example, so that the market of the outside furnaces is constantly becoming a more limited one. The steel makers, moreover, are generally carrying large stocks, or at least have their supplies contracted for sometime to come. It will be very difficult to enforce any considerable increase in prices, even by a general closing down of the furnaces. It is quite possible also that any attempt at extreme measures might drive a number of the furnaces out of the combination. Very careful management will be required to hold it together at all, should a period of dull trade follow the present activity.

The small basic steel plant built last year at Birmingham, in Alabama, has been working successfully since it went into operation, and is now to be followed by a second and much larger one at Ensley, near by. The new plant will be built by a separate company, the organization of which is referred to in our news columns, and will be under the control of the Tennessee Coal and Iron Company. The basic open-hearth process will be used, and it is proposed to give the plant a capacity of 1,000 tons of steel a day. This is a move in the right direction, and we have often urged the Alabama iron makers to take steps to work up their pig iron into finished material at home, instead of depending entirely on sales of foundry iron, as they have done heretofore. The growth of the iron trade in the United States in recent years has been mainly in the direction of steel production; and there is no reason why the Southern furnaces should not expand in that line. A plant of the kind proposed has excellent prospects, and we hope that it will be entirely successful.

In our issue of April 16th we mentioned that the Exploration Company, which floated the Sulphide Corporation (Ashcroft's process), Limited, had confessed that the process was a failure, and now the corporation has announced their definite abandonment of the process. It states that though the roasting and leaching were effected economically, the cost of the electrolytic deposition of the zinc and the difficulty of keeping the deposit free from moss had made the process impossible as a commercial success.

It must not be forgotten, however, that the corporation has another asset to fall back on, the Central Broken Hill Mine, so that if the complex sulphides produced there are treated by the ordinary Broken Hill method as outlined in our article in the issue of June 4th, the corporation has a good chance of paying dividends. This policy we believe has practically been decided on, though some investigations are being made to determine whether the Fry sodium sulphate process is economically applicable to the existing conditions. The services of M. August Raht have been secured for six months as consulting metallurgist to advise on these points. Without in any way disparaging M. Raht's eminent abilities, it would have been just as well to consult some one on the spot. The corporation estimates that they can produce concentrates constituting about one-fifth of the original ore at a cost of £4 5s. per ton. The question at present is whether to smelt these concentrates or sell them to European smelters, and it is practically the point which M. Raht is asked to settle. Their experience in smelting during the past month or two is not very favorable, as the cost works out at £2 per ton, though during April the cost was reduced to less than 36s. The cost at other mines on the Range is less than this, so with careful management and experience things may improve. As against this cost of smelting there is a freight of from 20s. to 30s. per ton to Europe to be considered, so our readers will understand the nature of the problem to be solved.

COPPER PRODUCTION IN 1897.

The statistics of the production of copper in the United States, as collected for Volume VI. of "The Mineral Industry," show that the output reached the highest point ever attained. The total was 510,190,719 pounds (227,763 long tons), showing an increase over 1896 of 30,384,536 pounds, or 6.3 per cent. The production by States is shown in the following table. In it is included the quantity of copper used in making copper sulphate; this was 13,003,236 pounds in 1897, and is not included elsewhere in the copper reported.

The table shows that, notwithstanding the very large production, stocks did not increase during the year; on the contrary, they were only 48,882,143 pounds on December 31, showing a decrease of 34,318,576 pounds, or 41.1 per cent. from the close of 1896. In other words, we consumed and exported more than our production. The table also shows that somewhat more copper was exported than was consumed at home, the shipments abroad reaching a total of 288,626,240 pounds, or 56.5 per cent. of the total. The gain in exports was comparatively light, however, being only 2.4 per cent., while that in consumption was 23.8 per cent. The demand in Europe was very large, chiefly for new electric work. The same class of work also helped the demand very much in this country. The shipments abroad were nearly all in fine copper, very little matte being now exported. That the demand increased largely as well as the supply is shown by the fact that prices were higher in 1897 than in 1896, the average price of Lake copper in New York having been 11.29 cents, against 10.88 cents in the previous year.

Montana continued to lead as a producer in 1897, its total having been 237,158,540 pounds, or 46.5 per cent. of the total. The increase in that State over 1896 was 8,200,376 pounds, and came chiefly from the Anaconda and the Parrot mines. The Boston & Montana about held its own, and nearly all the other companies showed a decrease.

Michigan held the second place, furnishing 145,839,749 pounds, or 28.6 per cent. of the total. The change here was small, an increase of 1,781,225 pounds being shown. The larger mines about held their own, none of them showing much change except the Tamarack. Some of the smaller mines had an increased production.

The third State in the list and the only other one which is a large producer is Arizona, for which there was reported in 1897 a total of 81,019,922 pounds, which is 15.9 per cent. of the total and 7,274,601 pounds more than in 1896. The Arizona mines showed a greater proportionate increase than those of almost any other State. As a rule they are closely and carefully worked.

The largest gain shown was in California, the copper production of that State increasing from 1,971,545 pounds in 1896, to 14,129,920 pounds in 1897. This was wholly due to the operations of the Mountain Copper Company at Keswick, which was actively worked through the year, and made a total of 14,047,220 pounds of fine copper.

Taking individual mines, the greatest producer in 1897 was the Anaconda in Montana, with an output of 131,471,127 pounds. The Calumet & Hecla was second, with 88,378,986 pounds; the Boston & Montana third, with 60,000,000 pounds; the United Verde of Arizona fourth, with 31,355,025 pounds; and the Copper Queen of Arizona fifth, with 23,999,873 pounds.

A notable feature in copper production has been the increase in electrolytic refining. Fully one-half of all the copper produced in this country in 1897 was refined in this way; and there is a continual improvement in methods and results. One notable result of these advances is a great reduction in our stock of metal under treatment, and consequently in the capital required.

The second table given herewith shows the copper production of the world, as reported by "The Mineral Industry." The changes last year were not marked. The United States continues the first producer, sup-

COPPER PRODUCTION IN THE UNITED STATES.
(Pounds of fine copper.)

States.	1894.		1895.		1896.		1897.	
	Pounds.	Long Tons.	Pounds.	Long Tons.	Pounds.	Long Tons.	Pounds.	Long Tons.
Arizona	44,531,108	19,880	48,329,403	21,575	73,745,321	32,922	81,019,922	36,170
California	120,156	54	225,650	101	1,971,545	880	14,129,920	6,308
Colorado	6,528,214	2,914	6,125,000	2,734	9,539,245	4,259	9,437,663	4,213
Michigan	114,526,555	51,128	129,740,765	57,920	144,058,524	64,312	145,839,749	65,107
Montana	183,094,755	81,739	194,768,925	86,950	228,958,164	102,213	237,158,540	105,874
Utah	1,183,098	528	2,664,757	1,190	3,550,050	1,585	3,854,821	1,721
Eastern and Southern States	2,437,986	1,088	3,255,000	1,453	3,750,124	1,674	3,727,939	1,664
All others	1,082,442	483	1,344,350	601	2,050,000	915	2,018,929	901
Copper in sulphate	12,500,000	5,580	12,000,000	5,357	12,183,210	5,439	13,003,236	5,805
Total domestic production	366,004,314	163,394	398,453,850	177,881	479,806,183	214,149	510,190,719	227,763
Stock January 1	57,418,689	26,073	78,738,689	34,698	86,961,280	38,822	83,600,000	37,321
Imports bars, ingots, old, and ores	11,726,485	5,235	13,875,560	7,194	a27,404,087	12,234	a26,938,254	12,026
Total supply	435,149,488	194,702	491,068,099	218,773	594,171,550	265,255	620,728,973	277,110
Deduct exports	167,651,153	75,737	121,703,978	54,332	281,905,217	125,851	288,626,240	128,851
Deduct consumption	188,759,646	84,267	282,392,841	125,619	228,666,333	102,083	283,220,590	126,438
Stock December 31	78,738,689	34,698	86,971,280	38,822	83,600,000	37,321	48,882,143	21,821

(a) This includes copper imported in low-grade Spanish and other pyrites chiefly for sulphur, and the copper imported from Canada in copper-nickel matte, in which the nickel is the metal of chief value; also the copper in certain gold and silver ores. These items do not appear in the United States statistics of imports.

THE WORLD'S COPPER PRODUCTION, 1894–97. (a)

Countries.	1894.		1895.		1896.		1897.	
	Tons of 2240 Lb.	Metric Tons.	Tons of 2240 Lb.	Metric Tons.	Tons of 2240 Lb.	Metric Tons.	Tons of 2240 Lb.	Metric Tons.
Australasia	9,000	9,144	10,000	10,160	11,000	11,176	17,000	17,272
Austria-Hungary	2,120	2,154	1,310	1,331	1,285	1,306	1,645	1,671
Bolivia	2,300	2,337	2,250	2,296	2,000	2,032	2,200	2,235
Canada	3,786	3,847	3,924	3,987	4,190	4,225	5,905	5,999
Cape of Good Hope:								
Cape Company	5,150	5,233	5,350	5,436	5,470	5,558	5,290	5,375
Namaqua	1,500	1,524	1,730	1,758	1,980	2,012	2,150	2,215
Chile	21,340	21,681	22,075	22,428	23,500	23,876	21,900	22,259
Germany:								
Mansfeld	14,963	15,202	18,860	18,908	18,265	18,557	17,960	18,247
Other mines	2,210	2,260	1,695	1,722	1,800	1,829	2,185	2,220
Italy	2,500	2,540	2,500	2,540	3,400	3,454	3,400	3,454
Japan	20,050	20,371	18,430	18,725	21,000	21,336	23,000	23,368
Mexico:								
Boleo	10,371	10,537	10,600	10,769	9,940	10,099	10,170	10,334
Other mines	1,400	1,422	1,170	1,189	4,032	4,098	4,868	4,945
Newfoundland	1,900	1,930	1,800	1,829	1,800	1,829	1,800	1,829
Norway	1,785	1,813	2,685	2,728	2,500	2,540	3,450	3,505
Russia	5,000	5,080	5,000	5,080	5,000	5,080	5,000	5,080
Spain and Portugal:								
Rio Tinto	32,689	33,215	32,985	33,513	34,501	35,055	33,900	34,442
Tharsis	11,000	11,177	12,380	12,638	11,040	11,217	12,000	12,192
Mason & Barry	4,200	4,267	4,100	4,166	3,381	3,435	4,300	4,369
Sevilla	1,170	1,188	1,050	1,069	1,025	1,041	810	823
Other mines	4,805	4,882	4,300	4,369	3,400	3,455	3,050	3,099
Sweden	500	508	515	523	500	508	554	554
United Kingdom	400	406	400	406	500	508	550	559
United States	161,510	164,194	172,524	175,294	208,760	212,112	227,763	231,421
Venezuela	2,500	2,540	.....	.....	*Nil.*	*Nil.*	*Nil.*	.....
All other countries	670	680	635	645	840	853	1,200	1,219
Totals	324,859	330,132	334,268	339,699	381,109	387,207	412,050	418,677

(a) The figures in this table are taken from the annual metal circular of Henry R. Merton & Co., except where returns have been received by THE MINERAL INDUSTRY direct from producers.

plying 55 per cent. of the total; Spain was second, with Japan, Chile, Germany and Australia following in order. Mexico promises to be a great producer in the future, but last year showed only a very small gain over 1896. The total production of the world was 418,677 metric tons, or 31,470 tons more than in 1896; the United States contributing 19,319 tons of this increase. With the present demand and prices, there in every probability of a still larger output in 1898.

THE METRIC SYSTEM.

The discussion over the adoption of the metric system of weights and measures in the United States has recently drawn out expressions of opinion from several engineering societies and commercial associations, and without exception these are in favor of immediate action by Congress to make the use of the system general and compulsory. There seems to be no doubt in the minds of most men competent to speak on the subject that we are hindered seriously in the race for trade and commercial supremacy by our adherence to a clumsy and antiquated system, which nearly all the rest of the civilized world has abandoned or is preparing to abandon. At the annual meeting of the National Association of Manufacturers in New York in January last, for instance, the special committee to which the subject had been referred—including such prominent manufacturers as Albert Herbert, Andrew Carnegie, Henry Fairbanks, Charles A. Schieren and Charles H. Harding—presented a strong report in favor of the general adoption of the system. This report not only referred to the difficulties arising from our present system and the extra labor which it imposes, but also brought out promiently the advantages to our growing export trade which the use of the metric measure would give The association approved the report, which urged upon Congress the necessary legislation to make the metric system the legal standard at an early date.

The sooner this action is taken the better. Nothing is to be gained by waiting, and the minor inconveniences which a change in measures will cause can only be aggravated by delay. One of the strongholds of the opponents of the metric system has always been the British adherence to the old standards and our large trade with that country. But in Great Britain the pressure in favor of the metric standards is even stronger and better organized than in this country, and if we delay it is quite possible that we may be left alone in our conservative adherence to the past—a strange position for a nation which has prided itself on its progressiveness.

Even Russia, which has always been supposed to be averse to innovations, is moving in this direction. The National Russian Congress of Commerce and Industry last year resolved in favor of the general use of metric measures, and there is assurance that the Russian Government will adopt the system should the United States and Great Britain, or either of them, do so. The metric system is now used by nations in Europe, Asia and America numbering over 400,000,000 people, and the addition of Russia to the list would bring the number up to more than 500,000,000. We cannot afford to antagonize the general opinion of these nations, with many of which we have an important and growing trade. No single measure can be of greater assistance to commerce than the adoption of a common system of standards.

The metric system, therefore, bids fair to become what one writer has well called "the universal language of quantity," and we shall inflict a serious injury on our trade if we still refuse to adopt that language, while no really good reason can be given against its use. The chemists long ago adopted it, much to their own advantage, as they have found. A large majority of engineers are in favor of it, and have so said through their representative associations. The only body of any importance which has opposed it is the American Society of Mechanical Engineers, and its action was brought about chiefly through the influence of a few prominent Philadelphians.

The practical difficulties in the adoption of a new standard have, we believe, been very much exaggerated. In another column we give a note of the experience of a large English shop which adopted metric measures on account of its heavy foreign trade. Some of this accords with trials made in this country. In the writer's experience in a large constructing shop he has frequently been told by pattern-makers, machinists and other skilled workmen of the manifest advantages of a decimal system, and the awkwardness of our feet, inches and fractions. These men as a rule would welcome the metric system and find little trouble in accustoming themselves to its daily use.

Why cannot the census of 1900 be taken and given to the world in metric measures, "the universal language of quantity?" That would be an excellent date to fix for the reform; and we hope all who desire it will take pains to make their voices heard, and so impress on our lagging Congress the need of speedy action.

NEW PUBLICATIONS.

"The Mineral Industry: Its Statistics, Technology and Trade for 1897." Volume VI. Edited by R. P. Rothwell. New York; The Scientific Publishing Company. Pages, $1,018; illustrated. Price, $5.

The appearance of the yearly volume of "The Mineral Industry" has come to be an event in the mining world, and, in common with many of my brethren, I look with interest for the coming of the now familiar red cover. We all know that we shall find in its pages the figures of production and trade to which we are constantly turning for information; but we have learned to expect something besides the statistics, and to look each year for new information on technical progress and the growth of knowledge and invention in mining and metallurgical methods and processes. Volume VI. is, it seems, again an advance on its predecessors, and in its thousand pages there is promise of even greater value. I say promise, for there has not been time yet to look through the list from "Abrasives" to "Zinc," and from "Australasia" to the "United States." It takes time to do that, and perhaps a whole year to fully appreciate the vast amount of useful knowledge the volume contains and to measure its great practical usefulness. A preliminary glance is, however, enough to furnish some general idea of the book.

First as to statistics, though this department is not the most prominent nor most useful. The many tables give us, one would think, all the information possible about the mineral production of the United States and the world, but each year there seems to be an addition to their number. Thus I find this year statistics of pumice (under "Abrasives"), ammonia, sulphate, slag, cement, Fuller's earth, sulphuric acid, uranium ore, etc., for the first time, while the table contains no less than 89 separate substances, as compared with 54 substances, of which we had more or less accurate statistics when "The Mineral Industry" was first published.

Moreover, the statistics of many substances are now given more fully than ever before. The foreign figures, too, are more comprehensive than heretofore.

I do not know how you have managed to do it, but I can appreciate the great labor it must have required to collect and arrange the mass of statistics given yearly and brought up to date. Certainly no producer or trader can do without them now if he wants to carry on his work successfully, and therofore intelligently. No business man can question the great value of the statistical and traue information published in "The Mineral Industry" volumes, but this great work contains in its technical articles information still more valuable, even quite indispensable, to the progressive, competent mining engineer, metallurgist or chemist.

You very properly devote a great deal of space to the precious metals. This is, perhaps, in accordance with human nature, which will always attach the first importance to them as long as they are the "precious metals," and the 128 pages assigned to them will be read probably as much or more than any other part of the book. The progress in the metallurgy of these metals will interest a great many professional men, and it seems to have been very fully treated here. The costs of mining and treating gold and silver ores certainly deserve and receive a great deal of attention, and we have here the materials for plenty of comparisons between our own methods and those in use in other countries. We have no cause to fear the comparison, especially as so much of the best work in South Africa and Australia is now under the supervision of American engineers.

Telluride gold ores are attracting a great deal of attention since Cripple Creek became a great gold camp, and the best mines in Western Australia are showing their value, and so Professor Kemp's paper on the occurrence of those ores and Mr. Argall's on their treatment by cyanide are timely. It is always well to listen to experience, and the 32 pages of Mr. Collins' description of gold milling in the old and successful district of Golpin County, Colorado, are very welcome.

Mr. W. R. Ingalls has given an excellent review of the most advanced practices in the metallurgical treatment of gold and silver ores which will be worth many times the price of the book to any one engaged in this department of metallurgy.

Next to the precious metals we must class copper, for which there has been so great a demand in recent years, and in this chapter of 47 pages there is much of interest. The remarkable copper deposit at Keswick, which is making California an important producer, is described. The great and growing importance of electrolytic refining is recognized in the record of progress made in that art. Of the other metals less is to be said, but the 45 pages devoted to lead and the 34 to zinc are filled with information of great practical value to all engaged in producing those metals.

A good deal of space is given, I find, to what we have been pleased to call the "rare elements," which most of us have considered of little or no importance. But the last year or two has shown in a more striking way than ever that the rare element of to-day may be in large use to-morrow, and is then no longer rare. It was only a short time ago that tungsten, vanadium and molybdenum were among the rare elements and of no commercial value, but now agents are looking for the owners of deposits; and so it goes all along the line. A year or two ago it was monazite or the thorium earths which were in demand; next year it may be another of these minerals, and it is well to be able to ascertain what is known of them and what their latest uses and values are.

Of the other metals there is not space to say much here, except that they seem to be sufficiently well treated. The metallurgy of nickel, quicksilver and tin receives further attention, though Volume V. seemed to have gone through these subjects pretty thoroughly.

Outside of the metals, I find clays and cement treated more fully than ever before. I know by experience the difficulty of getting at figures in relation to clay and the kindred industries, and I fully appreciate the work that must have been done to secure the statistics presented in this volume. Slate also claims attention and is presented more fully than anywhere else, so far as I know.

The chemical industry has a great future in this country, and the

space given to its progress is well occupied. Mr. Weidig's review of the American chemical industry ought to have been longer. Prof. Lunge's monograph on sulphuric acid is of great value, and the notes on electro-chemistry show well the progress made in that new and rapidly growing branch of the industry. The separate chapter on potash salts belongs with this subject also. Somewhat akin to this is Mr. Cowles' chapter on calcium carbide and acetylene, which is undoubtedly the very best monograph that has yet appeared on this subject, and gives us the latest facts on this promising deportment of the industry.

Sulphur is a subject of a good deal of interest just now, and the demand for it, chiefly in the chemical industry, is growing. An article upon it is serviceable, though it cannot supersede the monograph which Prof. Kemp gave us in Volume II. and which remains the standard authority on this subject.

It is impossible to take up all the metals and minerals treated of in this volume in detail, but I ought to have referred to the special information on manganese, including the cost of mining and the production in Russia, which furnishes a very large part of the world's supply just now. Platinum mining in Russia is well treated also.

Russia, in fact, is one of the world's great mining countries of the future, and I hope that in some future volume the Russian mineral resources may be fully treated. At present, however, such an article would have to deal rather with future possibilities than present results.

I should have noted that in the article on coal, the basis of all modern industries and commerce, there is a good chapter on the manufacture of briquettes of coal dust—a process well suited to the lignite or brown coals of the West and so extensively used in Europe. Here in our Eastern States, with excellent bituminous coal selling at 50 to 60 cents a ton at the mines, there is not much call for briquettes. The article on by-product coke well supplements Mr. Blauvelt's previous paper on the subject.

Of the special articles much interest attaches to Prof. Richards' "Progress in Ore Dressing," which gives us, as in previous years, a compact review of the new machines brought forward in 1897 and the improvements made. Much of this chapter is given up to concentrating machinery, showing again, as a writer in the "Engineering and Mining Journal" lately remarked, that this is a period of concentration.

The article on accidents in mining is an interesting and important one and its deductions are not always in accord with popular ideas, though mining engineers will appreciate them. It is generally believed that mining is what an insurance man would call an "extra-hazardous" occupation. Such is not the case in reality, and the expectation of life, under any proper mine management, is greater than in many other pursuits counted as normally safe.

In giving this rapid summary I have said nothing about faults; and indeed I have not had time to find them yet. That takes more time and careful reading. I might say that some of your readers would have liked to hear a little more about electro-metallurgy. Some years ago German and Swedish engineers promised to give us iron and steel made in the electric furnace, water-power being used to generate the electricity. Has it been done? And if not, why not? There are other questions to be asked, which we hope you will answer in Volume VII. Upon the whole, however, I am not disposed to find fault, but rather to accept the many good things put before us in this volume, pleased that we have so much.

It is not to be denied that in the six volumes of this "Mineral Industry Series" we have a library without which no one interested in mining and metallurgy can well get along; while to the merchant and manufacturer they are also indispensable. I confess that when the Scientific Publishing Company brought out Volume I. six years ago, I was inclined to be a little skeptical. The first volume was useful, without doubt; but could the interest be kept up each succeeding year? I see now that it has been done, and I admire the art with which each new volume has been made not only a complement of, but an improvement on, its predecessor. We cannot do without any of them; the man who tries to do so will soon find that he has made a serious mistake. I must congratulate you heartily on Volume VI. C. T.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supercede review on another page of the Journal.

"Statistics of Lake Commerce." By George G. Tunnell. Washington, D. C.; 1898. Government Printing Office. Pamphlet. Pages, 106.

"Transactions of the Association of Civil Engineers of Cornell University, Volume VI, 1897-98." Ithaca, N. Y. Published by the University. Pages, 184; illustrated.

"The Journal of the Iron and Steel Institute, Great Britain. Name Index Volumes I to L, 1869-1896." Edited by Bennett H. Brough, Secretary. London, England. E. & F. N. Spon, Limited, and New York, Spon & Chamberlain. Pages, 564.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Tax on Stock Transfers.

Sir: A great deal is being said on the various exchanges concerning the tax on stock transfers to be levied under the new revenue law. The opinion has been freely expressed that the tax will not put an end to the dealing in mining stocks, which is already at a pretty low point. A great many of the transactions are so small, it is said, that the payment of the tax will leave no profit in the deal.

To a certain extent this opinion is correct; but from another point of view the tax may be rather a benefit than otherwise. It will not stop actual sales and transfers, nor will it stop speculation in the better class of mining stocks, those which have an appreciable value. It will check the dealing which is largely carried on upon some of the exchanges in stocks based on claims and prospects with no actual present value. We all know these stocks, many of which sell for a fraction of a cent per share—and even that may be more than their real value. To stop these transactions will be a benefit rather than otherwise, for it is this kind of business which has tended to bring mining stocks into bad repute with the general public. Moreover, it has prevented many companies of the better class from listing their stocks on the exchanges. I think the tax will not be an unmixed evil by any means. Broker.

New York, June 21, 1898.

IRON ORE FROM SERIPHOS.—The British Consular reports give the exports of iron ore from the Greek island of Seriphos in 1897 at 133,300 long tons, a decrease of 16,140 tons from 1897. Of the exports last year 92,000 tons went to Great Britain, 32,300 to Germany, 7,000 tons to France, 2,000 tons to Austria.

MINERAL IMPORTS AND EXPORTS OF SPAIN.—Imports of fuel into Spain for the four months ending April 30th included 535,969 metric tons coal and 65,470 tons coke. Imports of iron and steel included 4,3 tons cast iron, 2,763 tons wrought iron, 4,648 tons rails and 241 tons tin plates. Exports of minerals for the four months were, in metric tons:

	1897.	1898.
Iron ore	2,380,334	2,418,476
Copper ore	265,302	268,349
Zinc ore	10,435	19,466
Lead ore	2,287	2,589
Salt	75,402	79,344

Exports of metals included 17,317 tons pig iron, 10,702 tons copper and 60,833 tons lead.

DUTY ON COAL TAR AND PRODUCTS.—A decision was handed down on June 11th by the Board on Classification of the United States General Appraisers on the protest of Samuel Cabot against the Collector at Boston on an importation of merchandise invoiced as "crude tar acids," "tar oil," "creosote oil" and "coal tar product creosote." The merchandise in question is an oily substance of a dark brown color and disagreeable odor, the product of the distillation of coal tar, and is of the same general character as the merchandise which was the subject of the Board's decision on June 23d, 1896, and resembling that which was the subject of the Board's decision of July 23d, 1896, which were reversed by the United States Circuit Court for the Eastern District of Pennsylvania and the United States Circuit Court of Appeals for the Second Circuit. Following these decisions of the courts the Board sustained the claim of the protestants that the merchandise is entitled to free admission under the provisions of paragraph 443, Act of August 28th, 1894, and reversed the assessment of duty at 25 per cent. ad valorem under the provisions of paragraph 60 of the same act.

PRIZE FOR MATCHES WITHOUT PHOSPHORUS.—United States Consul Roosevelt at Brussels reports that the Belgian Government has offered a prize of 50,000 francs for the invention of a match paste containing no phosphorus. The competition is open until January 1st, 1899, and the conditions which paste and matches submitted to competition must fulfill are as follows: The paste must offer to the action of shocks and friction such a resistance that dangerous explosions may not be apprehended during the process of manufacture. It must not contain any matter which by its emanations or otherwise may be dangerous during the process of manufacture to the health of the workmen. The matches must ignite on any surface (even on cloth). Submitted to alternatives of humidity and dryness of heat and cold, in the average limits, they must maintain their capacity ot easily ignite and not be subject to spontaneous decomposition. The matches, when struck, must not throw off any substance of a nature to burn persons or provoke fires. They must not discharge toxical fumes. Preference will be given to matches the paste of which does not contain any poisonous ingredient. These matches must also not be susceptible to friction, so that under ordinary conditions they will not easily ignite in the consumer's pocket, and that they may be transported and stored without danger.

PETROLEUM TRADE OF KOREA.—According to a report from United States Consul-General H. N. Allen, the imports of petroleum into Korea for two years have been, in gallons:

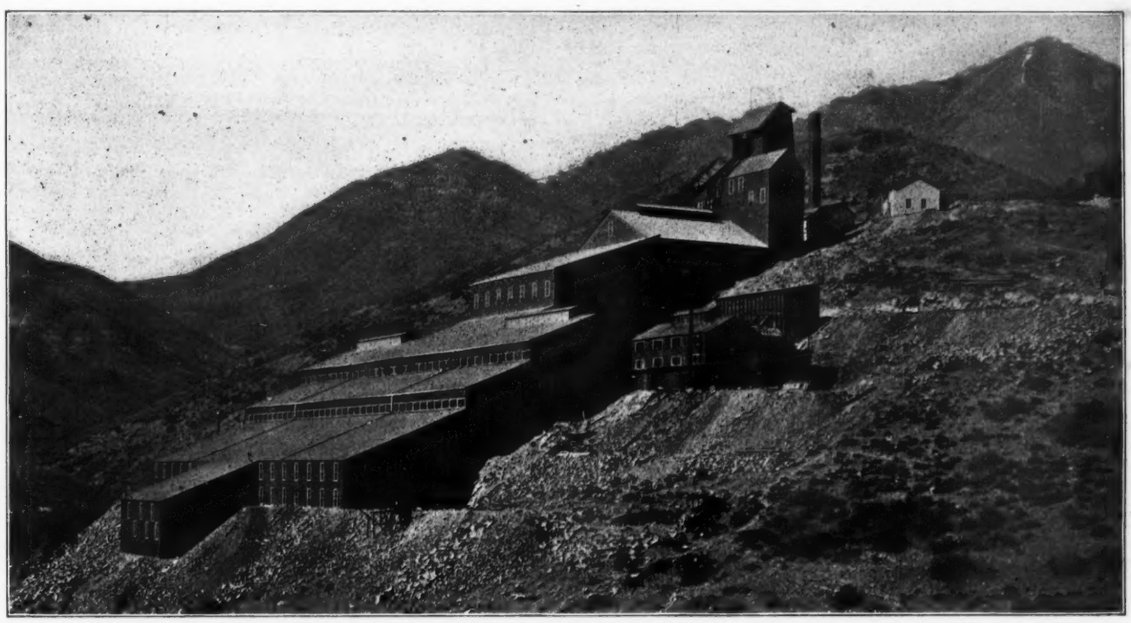
	1896.	1897.
American	1,349,740	2,010,820
Russian	264,530	158,300
Japanese	6,500	42,480
Sumatran	.....	103,230
Total gallons	1,620,770	2,314,830

The Consul's report says that the Standard Oil Company completed the erection of extensive and substantial warehouses on an island in the harbor of Chemulpo in 1897. It appointed an American firm, Messrs. Townsend & Co., regular agents to handle its kerosene. The natives have largely substituted this illuminant for the old vegetable oils in the districts near the open ports, and it is finding its way into the interior. A vigorous attempt was made to introduce Russian oil, but it was too heavy for use in the cold weather and too smoky. It soon spoiled the white wall paper of the Korean rooms, as well as the white clothes of the people. It will probably not figure largely in the customs returns hereafter. Some Langkat oil from Sumatra was introduced in cases made in imitation of those of the American company, but the tins were poor, and the oil leaked so badly that purchasers did not care for it.

ELECTRIC POWER AT THE GOLDEN GATE MILL, UTAH.

The largest cyanide mill in the world, the Golden Gate, at the Mercur mines in Utah, is operated by electric power, which is transmitted from the generating plant, a distance of 35 miles, to Mercur, at a potential of 40,000 volts. The entire outfit is of Westinghouse manufacture, and exemplifies the high development that has been made in the construction of machinery for long distance power transmission enterprises. The Telluride Power Transmission Company supplies the power, which is transmitted in three phases to the Golden Gate mill. This is situated at the entrance to the mines, 35 miles southwest of Salt Lake City, at the terminus of the Salt Lake & Mercur Railroad. The town of Mercur is the business center of the Camp Floyd mining district, and the Golden Gate mill represents the most extensive application of the cyanide process to the ores of that region. The capacity of the plant is over 500 tons of ore per day.

The mill is a steel structure, situated on the side of a steep hill, which was blasted so as to obtain level spaces of sufficient width to provide a foothold for the foundations. Provision has been made for minimizing the labor of conveying, by allowing the ore to start at the top of the hill and proceed by gravity from each level to the next below in the course of the different processes of treatment. The buildings cover 4 acres, being 294 ft. in width along the side of the hill and 420 ft. in length up and down the slope. The difference in vertical height between the upper and lower ends of the mill is over 400 ft. The buildings are shown in the illustration, Fig. 1, which gives a view of the entire plant. The mines, not shown in this figure, are situated below the part of the slope that appears in the illustration. There are eight levels in the mill proper. The loose stone produced in blasting out these levels



GOLDEN GATE MILL, DE LA MAR'S MINES, MERCUR, UTAH.

was used in building the foundations and retaining walls. These walls are 2 ft. wide at the top, and have a batter of 1 in 12. They comprise over 5,000 cu. yds. of rubble masonry, laid in lime mortar. The structural steel work of the building contains over 2,400,000 lbs. of metal.

The installation of the motors was in charge of the Mountain Electric Company, of Denver, Colo., under the supervision of Messrs. Nunns, the general contractors.

In the transmission of power to Mercur, the loss of electric energy is extremely low, being scarcely 5 per cent. In that dry region, high potential lines require but little attention, and wastes are reduced to a minimum. Current is delivered to the mine at $60 per H. P., per year, with a minimum consumption of 300 H. P. stipulated. The transformer house, which contains the apparatus for converting the current from 40,000 volts, three-phase, to 220 volts, two-phase, is located between the shaft-house and the mill. A view of the interior of the high-tension room is given in Fig. 2, which shows the general arrangement of the Wurts lightning arresters and high-tension lines.

The ore is hoisted from the shaft on an incline to the crusher situated at the top of the hill, a distance of 800 ft. This first, or upper story of the mill, is devoted to the coarse crushing of the ore, and is 25 ft., wide by 75 ft., long, the height being 100 ft. It is divided into three floors. The upper floor receives the ore in bins, just as it comes from the shaft. The middle floor contains the crushers, weighing 20 tons each, and having a combined capacity of 1,500 tons daily. They are operated by two 50 H. P. Westinghouse type C motors. From the crusher floor the ore is lowered to the third level of the upper story, where it is stored in bins of 2,000 tons capacity. This entire upper story is divided vertically into three chutes or compartments, for the different kinds of ores — talcy, silicious and arsenical — which are kept separate through the mill until they are finally mixed for the leaching tanks.

The second section of the mill contains two dryers, having a capacity of 500 tons per day, room being left for another dryer, in case the plant should be enlarged. The ore is worked over the floors of the dryers by rabbling devices operated by endless chains, and is there heated for about 2½ hours. In the third section, the fine crushing and ore sizing is carried on. The machinery consists of four sets of 26 in., and three of 36 in. Cornish rolls, with a maximum crushing capacity of 1,000 tons per day; Berthelet apparatus for sizing; and a system of elevators for raising the crushed product to the separators. Six elevators are used, two to each of the three different classes of ore, and their lift is 60 ft. There are three separators for each class, that which is sufficiently fine passing through to the next section, while that which is still coarse is passed through the crushers until fine enough. The pulverized ore is finally collected in an ore-bin holding 2,000 tons. Under this ore-bin is a dust chamber which is connected directly with the main flue, and is provided with hoppers spaced 12 ft., apart. The floor is so arranged that the dust collects at the mouths of these hoppers to be drawn off into the cars below.

The roasting of the ores takes place in Sections 4, 5 and 6. Four straight-line furnaces are used. The arsenical ores are crushed to about 10 mesh and discharged into two of the furnaces. The talcy ores are crushed to 4 mesh, and roasted in the remaining furnaces. The silicious ores do not require roasting, but are emptied directly into the receiving hoppers below the roasters and mixed with the other ores while there, in proper proportions for the leaching tanks. The four roasters are contained in Sections 4 and 5, Section 6 being reserved for a possible future addition. The furnaces used for the arsenical ores have a daily capacity of 75 tons each; those for the talcy ores of about 150 tons each. The furnaces have their roasting hearths directly on the foundations, the calcined ore being elevated to the cooling floors above. The ore is stirred during roasting by means of V-shaped plows or scoops attached to rabbling carriages. These consist of I beams mounted on wheeled carriers which run on tracks on either side of the furnace hearth. They are driven by endless cables, and are spaced 75 ft. apart, the cables running on sprocket-wheels. The ore is stirred and advanced by these motor-operated cables once each minute. One man attends to two furnaces. The gases are carried from the furnaces through 6 by 8 ft. flues into the main dust chamber, which runs from this section to a steel stack 8 ft. in diameter and 85 ft. high, located on the hill above the buildings.

From the furnace hoppers the ore passes through a tunnel to a point just above the tanks on the seventh section of the incline. This section has two floors, the main floor containing 10 tanks, each 25 by 50 ft. and 5 ft. deep, and three solution tanks, 20 ft. in diameter and 12 ft. high. The tanks are supported by masonry piers and a retaining wall. The ore from the tunnels is received in cars and run out by hand over the tanks, where it is dumped. The solutions filter through the bottom of the tanks, passing out to the precipitating tanks on the eighth level. When the liquor has been drawn from the tanks the tailings are carried out on cars which run from underneath the tanks to the waste dumps.

In the eighth or lowest section the gold is precipitated from the cyanide solution, drawn off from the leaching tanks, in three vats 14 ft. in diameter by 8 ft. high, containing zinc turnings.

The works contain, in addition to the departments already mentioned, a machine shop, warehouse, gas plant (in which water gas is produced for roasting and drying the ore), assay office, refinery and chemical laboratory.

About 100 ft. above the mill, the power-house, a one-story brick building, 25 by 70 ft., is located. Here are placed the Westinghouse motors for operating the hoist and motor-driven air compressors for the machine drills in the mine below. An electric hoist of 150 H. P. operates the cages for the ore in the two compartments and one of 75 H. P. operates the cage in the manway. In addition to the above purposes,

Westinghouse motors are employed for the main shaft. blowers, centrifugal pumps, assay department, etc. The plant is operated entirely by two-phase induction motors, aggregating 700 H. P., all of the Westinghouse type C. The interior of the hoist room is shown in Fig. 3, with the large hoist. The hoists are direct connected to 150 and 75 H. P. motors. There is also installed in this room a 150 H. P. motor direct connected to an air compressor.

A 50 H. P. motor is used in driving the main shafting in the mill, while another of the same size drives the shaft for the roasters and the ore conveyor. The pump in the precipitation room is driven by a 20 H. P. motor. All motors are operated on a 24-hour load, and have been running continuously for the past two months.

The cost of the mill and equipment was about $400,000. The mine was described in the "Engineering and Mining Journal" for April 24th, May 1st and July 31st, 1897. At the time the Golden Gate mill was erected, some doubt was felt as to whether electrical machinery would be found adequate for the heavy work of the plant. It has turned out, however, that the electrical apparatus is the most trustworthy and reliable part of the equipment. If a crusher becomes clogged, it is usually the case that a belt or gear will give way before the motor becomes stalled.

LIMESTONE AND LIME IN BLAST FURNACE PRACTICE.

By Charles Cochrane.

This paper contains the results of a comparison of limestone and lime (1896-97) employed as flux at a furnace 90 ft. high, of 31,659 cu. ft. capacity (as originally constructed), enlarged by wear to about 34,500 cu. ft. capacity, at Ormesby Iron Works, Middlesbrough, The failure of a kiln employed to calcine limestone necessitated the substitution in November, 1896, of raw flux for calcined, and afforded the opportunity to compare the working of a furnace under the altered condition.

In making a comparison instituted between the average returns of the four months September and October, 1896, May and June, 1897, and those of the six months November, 1896, to April, 1897, a general uniformity is shown in the conditions of quality of coke containing 11.09 per cent. of ash, sulphur, and water in the four months, and 11.56 per cent. in the six; of quality of raw ironstone containing in the one period 26.74 per cent. of iron, against 26.96 per cent. in the other; of temperature of blast only differing in the two periods by 15° of pressure of blast, 5.04 lbs. as against 4.97 lbs. of output of iron, showing 101 tons per month in favor of the period during which the flux was partially calcined. The ratio of CO_2 to CO has been disturbed by the employment in May and June, 1897, of a considerable amount of extra coke, so that a comparison between these is slightly disturbed, but not to an extent to interfere seriously with the deductions which arise therefrom.

The salient points of difference between the two periods under discussion are:

1. Reduced consumption of coke when calcined flux was employed, showing an economy of 1.03 cwt. per ton of iron, and with a low percentage loss of carbonic acid from 13.96 cwts. of limestone, from which $8.92 - 2.93 = 5.99$ of calcined flux and 5.04 raw limestone proceeded. Although the 5.99 of calcined flux was obtained from $13.96 - 5.04$ of limestone, from 8.92 with a loss of 32.84 per cent. of carbon dioxide, its admixture with 5.04 raw limestone reduced the real loss of dioxide of carbon on the 13.96 cwts. total of limestone to only 20.99 per cent.

2. Reduced waste of raw limestone per ton of iron from 2.06 cwts. in the period when raw limestone was employed, to 0.66 when imperfectly calcined flux was employed, a difference of $2.06 - 0.66 = 1.40$ cwt. of raw ironstone per ton of iron. This will be seen to be a highly important matter, for the difference of 1.40 cwt. in favor of calcined flux amounts, on an output of 3,635 tons of iron per month, to a difference of 254 tons of ironstone, or to 72 tons of pig iron per month. Nor must it be supposed for a moment that this difference is accidental; it is the real outcome of the difference of the conditions of employing limestone raw and partially calcined respectively, so that when consuming raw limestone the gross waste of ironstone was necessarily 2.06 cwts. per ton of iron, and in consequence of the use of partially calcined flux the gross waste was reduced to 0.66. Over a period of 16 months, ending August, 1896, while using partially calcined flux, this average waste of ironstone per month was found to be 0.21 cwt., by which the average waste of four months, September and October, 1896, May and June, 1897, is exceeded to the extent of 0.45 cwt. There is doubtless some explanation for this difference, but having established a fair average loss, to which under any special set of circumstances a furnace is liable, such loss may be fairly attributed to what may be called the "habit" of the furnace.

In the case of the furnace under consideration, it was blown in in April, 1895, with an original capacity of 31,659 cu. ft., which in July, 1896, had enlarged to 34,814 cu. ft. In January, 1897, it was slightly reduced to 34,320, and in April, 1897, possessed a capacity of 34,396 cu. ft.

The gross loss or waste of ironstone was only 0.23 cwt. for eight months of 1895, May to December, inclusive, and 0.19 cwt. for eight months of 1896, January to August, inclusive, so that the difference in capacity does not appear to account for the increase of the gross waste to 0.66 cwt.; but when we look at the superior calcination of the flux in the 16 months prior to September, 1896, we shall find a probable explanation of the low waste of 0.21 cwt., in the fact that the limestone over that period was calcined to the extent of 27.37 per cent., while the furnace also enjoyed the advantage of new internal "lines." When raw limestone alone was employed, the waste of raw ironstone rose to 2.06 cwts. per ton of iron, and such waste would appear to arise from the circumstance that raw limestone descends much farther down into the furnace when this is employed instead of a limekiln, than does partially calcined flux. The result is a large reduction of the cubical space of boshes, in which perfect admixture of ironstone and lime can take place for perfect fusion into iron and slag. Where the flux is introduced calcined wholly or in part, the breaking up of the friable lime quickly commences, and becoming intimately mixed with the ironstone in a longer period of descent than can possibly be the case with limestone introduced raw, a more perfect chemical reaction ensues with correspondingly less waste of ironstone. How serious is the loss of fuel when limestone is employed has already been indicated in a difference of 1.03 cwt. of less coke expended when the calcination was only 20.99 per cent., but this by no means tells the whole tale.

In the six months November, 1896, to April, 1897, during which 13.91 cwts. of raw limestone were employed per ton of iron, the limestone containing 2.61 per cent. of silicious matter, the whole of the contained carbon dioxide, viz., 5.96 cwts., was necessarily expelled at the expense of the coke. According to Gruner, the decomposition of limestone requires 373.5 Centigrade units of heat, while 1 unit of carbon burnt into carbon monoxide develops 2,473 such units. Hence there were needed to expel the whole of the carbon dioxide from 13.91 cwts. of limestone 2.10 cwts. of carbon, or of coke containing 11.56 per cent. of ash, sulphur and moisture 2.37 cwts.

*Abstract of paper read at May meeting of the British Iron and Steel Institute.

SIR HENRY BESSEMER'S WILL.—The will of Sir Henry Bessemer has been proved. The gross value of the whole of the estate has been entered at £92,538, and the net value of the personal estate at £58,217, but the will appears to indicate that he had disposed by gift during his lifetime of property to the value of twice or three times as much as he left.

SLATE EXPORTS FROM THE UNITED STATES.—The report of the Bureau of Statistics of the Treasury Department for April gives the value of exports of roofing slate for that month at $97,863, an increase of $5,877 over April, 1897. The gain for the month was comparatively small; for the ten months of the fiscal year from July 1st to April 30th the total exports were valued at $1,100,874, against $577,184 last year; showing an increase of $523,690, or 90.6 per cent., this year.

SAULT STE. MARIE CANAL TRAFFIC.—From the opening of navigation to June 1st there were 3,305 vessels passed through the Sault Ste. Marie Canal. The quantity of freight was: Eastbound, 2,614,295 short tons; westbound, 758,052 tons; total, 3,372,347 tons, against 2,204,955 tons up to the corresponding date last year. Included in the freight this year were 62,821 short tons anthracite; 576,009 tons bituminous coal, and 1,824,595 tons iron ore. Navigation opened early this year.

AN ANTIDOTE FOR CYANIDE POISONING.—The "Journal" of the Chemical and Metallurgical Society of South Africa reprints the following from a German exchange: "Practical experience has shown that peroxide of hydrogen may be considered a powerful antidote for cyanide poisoning. It has recently been applied successfully in 2½ to 3 per cent. solution as subcutaneous injections, which were performed every four minutes at different parts of the body. At the same time the stomach was washed out with a 2 per cent. H_2O_2 solution.

"Peroxide of hydrogen forms with hydrocyanic acid oxamide, which is a harmless compound: $2\ HCN + H_2O_2 = 2\ CONH_2 =$ oxamide."

TEMPERATURE IN AMALGAMATION.—Herr A. von Dessauer writes to the Chemical and Metallurgical Society of South Africa on this point as follows: "Experiments which I carried on for two years in the 120-stamp mill of the Twelve Apostles Gold Mining Company, Transylvania, and other mines, proved that the amalgamation with warm or cold water was equally good; the battery water in summer varied from 80° to 90° F.; in midwinter it had been from 34° to 36° F. The theoretical and actual extraction in both seasons showed hardly any difference, but amalgam obtained from warm water had 25 to 35 per cent. of gold, whereas it yielded in winter time only 7 to 10 or 12 per cent. gold. The most dangerous seasons for amalgamation were spring and autumn, as the temperature of the mill water varied enormously in consequence of night frosts. Amalgam that had settled hard on the plates out of cold water during night time, got soft in day time, and was washed down the plates into the mercury traps and even beyond those. It seems that the percentage of gold in hard amalgam is in direct proportion to the temperature of the pulp. The quantity of mercury needed in winter was therefore three or four times as large as in summer for a given quantity of gold. The loss of mercury from plates was larger when warm water was used, but it was considerably larger in the rotating amalgamating pans when cold water was used."

THE METRIC SYSTEM IN ENGINEERING.—Capt. M. H. P. Riall Sankey, in a paper read at the Engineering Conference in London last year, after briefly discussing the advantages of the metric system, described the results of its introduction into the works of Messrs. Willans & Robinson. Wherever gauges and templates were used, the question of their measurement in inches or millimeters was not a matter of much importance. The old drawings were therefore still employed for the earlier sizes of engine, but the templates and gauges were marked with the millimeter equivalent to the third place of decimals in order to accustom the men to the new unit. All new drawings were made on the metric system. Some difficulty was wet with in connection with the screw threads. The Whitworth and gas threads had been retained, but the bodies of the bolts were turned slightly larger than usual for each size, so as to bring them up to even millimeters, and thus to enable the bored holes to take the corresponding screw cut to the standard used by the French makers of the engine.

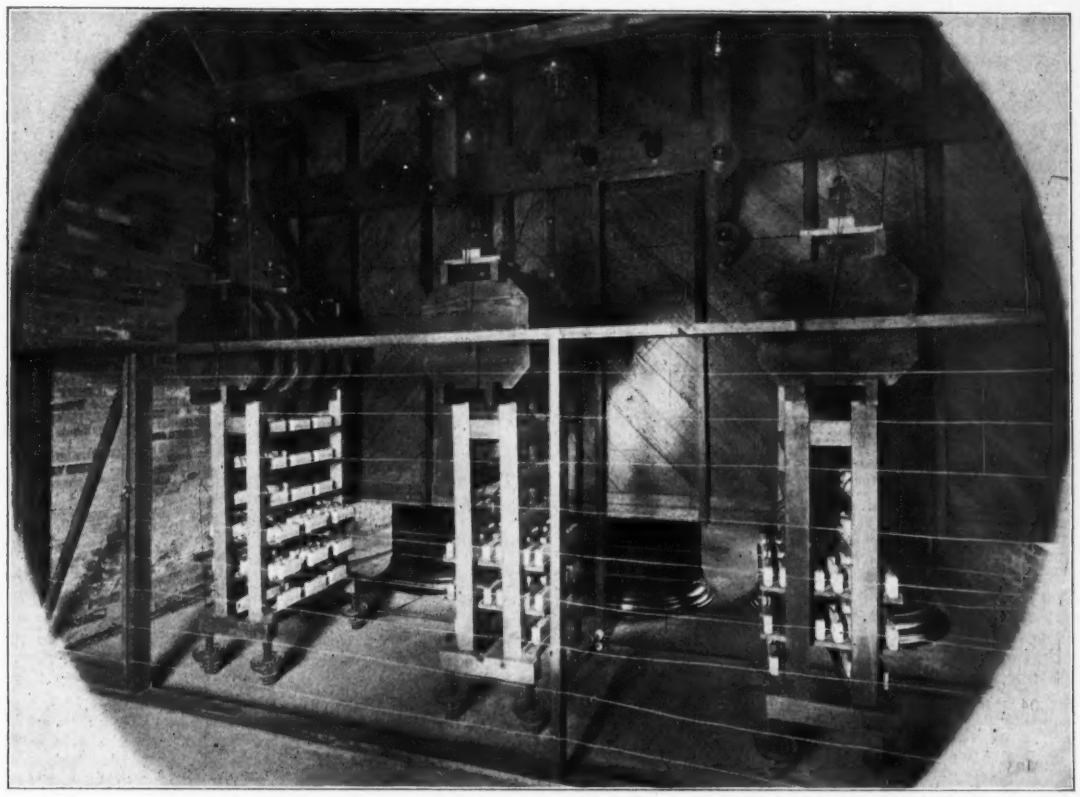
After four years' working, the draftsmen were practically unanimous in favor of metric measures, as being easier to check and to read, and requiring a smaller number of figures. No serious mistakes had been traceable to the change, and very few minor ones. In the shops, the old system was preferred at first, the new figures conveying very little idea of size, but the men were now much in favor of the millimeter. The works manager considered it easier to teach men the use of the rule with the metric than with English measures.

THE STEAM TURBINE.

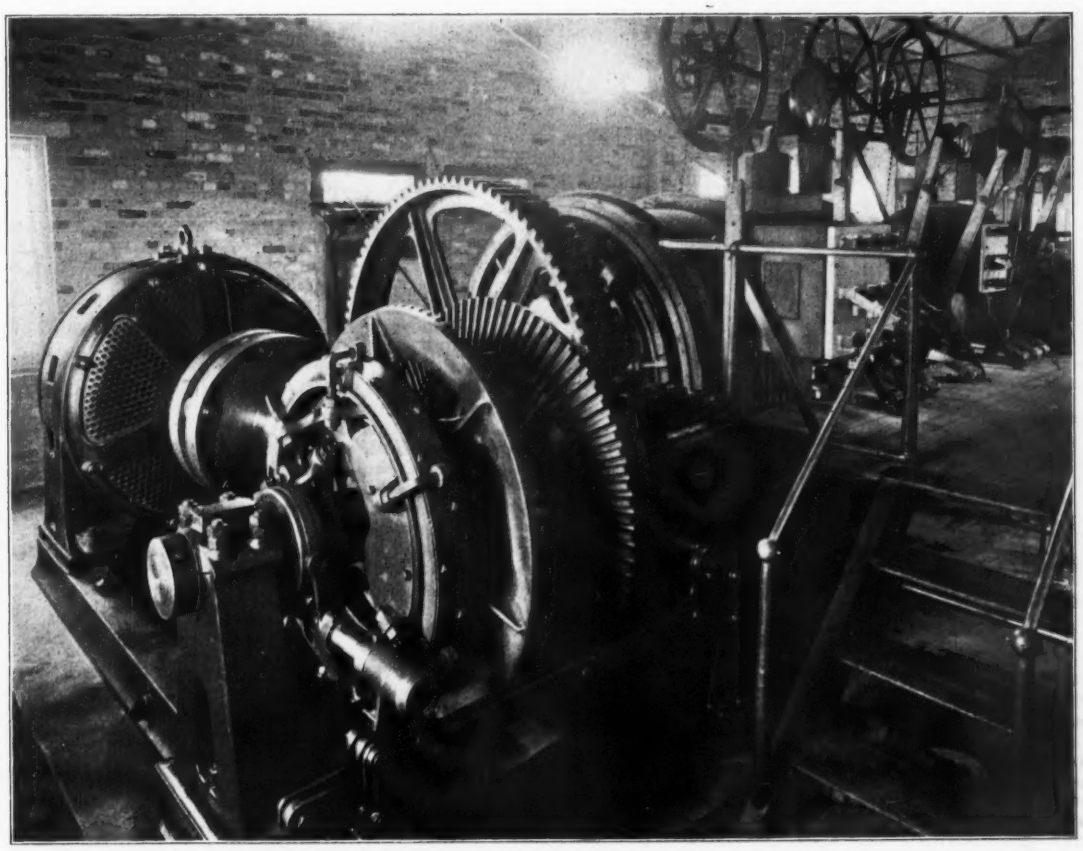
In a paper read at the recent Engineering Conference in London, and abstracted for the Institution of Civil Engineers, Mr. C. A. Parsons said the first compound steam turbine directly coupled to a dynamo was made in 1884. It ran at 18,000 revolutions per minute, and gave 6 electrical H. P. Within the last five years direct-coupled turbine-dynamos and alternators of 500 to 700 electrical H. P. had been constructed, and at the present time above 30,000 H. P. of these motors were at work in England.

In the compound turbine of the "parallel flow type," the steam, entering by an inlet all around the shaft, passed through successive turbines of gradually increasing area of passage-way, and was expanded by small increments of volume at each turbine till it arrived at the next series of turbines. These were of larger diameter, and, consequently, greater peripheral speed and capacity, and allowed of further expansion. Finally the steam flowed to the last series of turbines, where, the expansion being completed, it passed to the exhaust-pipe.

In the "radial flow type," the rows of turbine blades were keyed into and projected from the faces of moving disks attached to the shaft, and fixed disks attached to the casing. The course of the steam was



LIGHTNING ARRESTERS IN HIGH TENSION ROOM, GOLDEN GATE MILL, UTAH.



MOTOR COUPLED TO HOIST, GOLDEN GATE MILL, UTAH.

outwards through the rings of blades, then inwards, and again outwards through the blades on the succeeding disk, and so on. The bearings were of special construction. Around the bush in which the shaft revolved were placed three concentric loosely-fitting tubes truly bored and centred, the action of which was to form extremely thin layers of oil around the shaft, which acted as a cushion and prevented hammering and vibration. The bearings were kept supplied with oil by a pump, and the end pressure of the steam was balanced by a rotating piston. A special form of governor, worked by a solenoid, was employed.

The first cost was smaller where turbines were used, and the maintenance was also less. This enabled more spare plant to be kept in readiness for heavy loads, especially as the machines occupied very little space. There was, moreover, no danger of injury through priming, and the exhaust steam was free from grease. The consumption of steam at average load was small, and there was very little vibration.

ONTARIO MINING NOTES.

From Our Special Correspondent.

Following are the official statistics of the production of metalliferous mines and works of Ontario for the first three months of 1898, as published this week in Part II. of the seventh report of the Bureau of Mines:

		Value.
Gold, ounces	5,288	$86,175
Silver, ounces	9,750	5,287
Nickel (in matte), tons	652	119,910
Copper (in matte), tons	1,202	75,369
Iron ore, tons	5,203	9,488
Pig iron, tons	12,927	155,126

The value of the products for the quarter was $451,355, as against a total of $1,042,779 for the whole of 1897. Comparing the production by percentages, it is found that the value of the gold product in the three months of 1898 is 50.5 per cent. of the 12 months' product of 1897; of nickel, 33.3 per cent.; of copper, 37.7 per cent.; of iron ore, 202.3 per cent.; of pig iron, 54 per cent., and of all metals and ores 43 per cent. These rates, if maintained throughout 1898, the report says, should result in nearly doubling the values of 1897. The number of tons of gold ore treated was 13,939, of an average value of $6.18. This is a somewhat low rate, but many of the gold properties are just getting into shape, and much rock taken out in development work has been crushed whose gold contents were inconsiderable.

The silver ore treated was only 35 tons, yielding 278 oz., or $151 per ton. At the West End Silver Mountain Mine a force of 21 men is now at work, and a further quantitq of very rich ore is being taken out. The mill at the East End Silver Mountain is not yet in operation, awaiting the arrival of a new boiler and crusher. Trestles connecting the mill with the mouth of tunnel No. 2 are being built. Mr. H. Shear is manager of the former mine, and Mr. R. Sandoe of the latter.

There is a noticeable increase in the proportion of Ontario iron ore used at the Hamilton blast furnace, but the bulk of the pig turned out there is still from American ore. Chief among the items are the nickel-copper mattes of the Sudbury mines, the chief producer being the Canadian Copper Company. The Dominion Parliament has just risen without placing an export duty on nickel ore and matte, as it has been persistently importuned to do by those who thought such a tax would bring about the refining of the nickel and copper in Canada. This work is at present done almost wholly in the United States, and perhaps the government felt that a measure of this kind was inexpedient at the present time, when so many influences are making for freer commercial intercourse between the nations north and south of the line. The power to impose an export duty, however, remains in the hands of the cabinet itself, to whom it was committed by Parliament a year ago.

One of the best petroleum wells ever sunk in Ontario was recently struck on lot 5 in the First Concession of the township of Zone, in the County of Kent, about 3½ miles north of Thamesville station on the Grand Trunk Railway. The lot was under lease to the Chatham Oil Company, which sank two wells on it in May last, one of which yielded 10 barrels a day and the other three barrels. The third well was started on June 1st, and at a depth of 354 ft. the drill fell 14 in. into a crevice and on June 6th a pump was put in, the test showing that the well had a capacity of 40 barrels per hour. Owing to a lack of tanks in which to store the oil, the well has not been pumped steadily, but so far there has been no falling off in the rate of production. No water whatever accompanies the oil, which is of a quality slightly superior to Petrolia oil, and about equal to that of Oil Springs.

The report of Mr. A. H. Gracey, sent out by the Provincial Government to investigate the Vermillion River placers, has just been published. Mr. Gracey found gold-bearing beds of gravel extending all along the upper Vermilion from the township of Capreol to the headwaters. In some cases these beds were found extending inland for several miles, and similar deposits were found on the upper waters of Wahnapitae, but they were invariably low in gold. A few colors to the pan were found, running up to 30 or 40, but they were almost always very fine, little or no coarse gold being discovered. The average value, so far as ascertained, would not be more than 8 or 10 cents per ton. The beds, however, are large, and it is possible some of them may be profitably worked on a large scale if the gold is not too fine to be recovered by the hydraulic process.

The appeal of J. F. Caldwell, owner of the Sultana Mine, in the case of Caldwell vs. Fraser, has been dismissed by the full court. This settles in their favor the closely contested claim of Fraser and others to an extension of the Sultana vein located under the waters of Lake of the Woods by diamond drill boring through the ice. The large crib by means of which the mine is to be worked is now in place and has been successfully pumped out. A shaft is to be sunk and the vein is expected to be reached at a depth of 100 ft. from the surface.

PYRITIC SMELTING FOR SOME TRANSVAAL ORES.*

By D. Doerffel.

There can be no doubt that most of the ores from the auriferous quartz veins in South Africa are highly refractory; in many instances the oxidized zone will not extend deeper than 60 to 80 ft. These ores are not only rebellious in the general sense, that is, the gold is contained in iron pyrites, but we find that in many instances it is associated with minerals, such as fahl ore, speiss cobalt, copper pyrites, arsenical pyrites, galena, and so forth. To illustrate this, I mention some specimens of Transvaal ores, all containing gold.

No. 1. Fahl ore, assaying 2½ ozs. of gold.

No. 2. Arsenical pyrites, assaying 2 or 3 ozs. of gold, with some lead and copper.

No. 3. Covelline and copper pyrites, containing gold and silver.

No. 4. Visible gold with galena and iron pyrites.

No. 5. Speiss cobalt, containing silver and trace of gold.

No. 6. Arsenical pyrites and iron pyrites containing silver, gold and copper.

No. 7. Copper pyrites, containing 0.5 oz. gold and 10 ozs. silver.

No. 8. Speiss cobalt, containing 5 to 8 ozs. of gold and a few per cent. of copper.

No. 9 and 10. Speiss cobalt, containing 2 or 3 ozs. gold.

No. 11. Pyritic ore, Barberton, assaying 0.75 oz. gold, Mount Morgan Mine.

It is evident that ores of this description are not amenable to the ordinary methods in vogue in the Transvaal. It is true that arsenical pyrites can, after roasting, be chlorinated or cyanided, but the presence of a few per cent. of lead or copper will not allow these methods of extraction.

There are two ways of disposing of these ores: one to concentrate the ores and export the concentrates to Europe; the other to smelt the ores and export the metallurgical products (matte or speise). Both the latter as well as the first mentioned find a ready market in Europe. It all depends on circumstances which way is adopted.

I believe that in most cases smelting will be the most profitable. To prepare concentrates for export means close concentration, and consequently great loss, which is a serious question, as we are treating gold ores. For pyritic smelting close concentration is not required, as the gangue will always be useful for fluxing. The object of pyritic smelting is to make the pyritic material of the ores act as fuel in a blast furnace so that no carbonaceous fuel need be used. Ores adapted for a pure pyritic smelting are very rare, and therefore in most cases pyritic smelting is carried on with the help of a slight percentage of carbonaceous fuel. The ore acts not only as a fuel but also as a collector for the precious metals as well as for copper, cobalt, nickel; it also serves as a flux. The ore is consequently used raw. A preliminary roasting is not required, only the necessary fluxes are added.

Pyritic smelting was already in use—and I believe is still—some hundreds of years ago in Hungary, where auriferous iron pyrites are fused in a blast furnace and a regulus of iron proto-sulphide formed. This is fused again with fresh ores until the regulus is rich enough. The gold is extracted by chlorination or by lead and copper smelting. However, the losses are very heavy, as the iron proto-sulphide is not a good collector, and it is not advisable to attempt the smelting of iron-pyrites in the absence of copper or lead. For pure iron and arsenical pyrites it will always be best to resort to leaching methods.

The most suitable ores for the process are cupriferous iron pyrites, copper pyrites—in fact all sulphides and arsenides of non-volatile metals. That such ores exist in the Transvaal is demonstrated by the specimens of ten different occurrences, and I know of a great many more.

With regard to slag, Herbert Lang says in his book on "Matte Smelting," "that any sort of slag that will melt at all may be used," but adds, "that acid slags are preferable." In lead smelting, slags have an upper limit in silica of about 37 per cent., while in pyritic smelting the SiO_2 may go as high as 52 per cent., making thus much higher silicious charges possible; in fact silica controls the chemical changes to a great extent, and so much silica ought to be in the charge as to induce the iron and sulphur to part company.

As we have to export the speise or matte, it is essential to expel as much iron as possible. By this it will be seen that silica also regulates the concentration of pyritous ores. In most cases it will only be necessary to provide for a silicious ore FeO resulting from iron pyrites. One atom of S of FeS_2 is either burned or sublimed. The resulting FeS is decomposed in presence of $SiO_2 + O$ with evolution of heat (over 1,700° C) into $FeO + SO_2$. FeO combines at once with SiO_2, thus forming the slag. However, before adding a base, if FeS_2 is not available CaO, MgO, BaO, will do the same service. For a highly pyritical ore it will be necessary to add SiO_2 as flux. Slags having iron as almost the only base, can be run just as clean as those containing lime or other bases.

Theoretically, pyritic smelting is smelting without carbonaceous fuel, but in practice a small percentage of coke, say 1 to 3 per cent., is added. This is an important question, where fuel is expensive, if a mine is not in close proximity to coal or to a railway. As the products have to be sent to the nearest railway station, it will be possible to carry back the small amount of fuel necessary for the process at a moderate expense. Instead of coke, wood can be used, simply sawn in blocks. It will do better service than charcoal. Even gases may be made use of, a fact of great importance in the Transvaal with its wealth of low-grade coal.

The furnace may be of any good type employed for matte smelting. Pyrites decrepitate in heat, and would pack so tight as to choke a high furnace, therefore a column of 8 to 10 ft. is quite sufficient. The ore should be charged as coarse as possible. In case of fine concentrates, not more than 50 per cent. is admissible. Both hot and cold blasts are used according to circumstances. For a slag not readily fusible or of high sulphur contents a hot blast will be required. A cold blast will

*Paper read before the Chemical and Metallurgical Society of South Africa.

work best with low sulphur ore in presence of lead, which would be nearly all volatilized or slagged with a hot blast.

The concentration must be carried to a point that it pays to ship the product. The ratio of concentration can be easily regulated. It is not advisable to subject a poor matte to a second smelting, it being preferable to obtain at once a product of the necessary richness.

It follows from the foregoing that pyritic smelting is applicable with advantage:

First, where fuel is expensive.

Second, whenever the proportion of the auriferous minerals makes the application of the leaching process impossible.

Third, if the proportion of sulphides in the gangue is such as not to admit water concentration.

Fourth, if the ore is too poor for shipping.

Fifth, if copper, nickel or cobalt are present in sufficient quantities as to render their saving important.

In many instances we have to face difficulties of this sort, but I think I am justified in saying that in South Africa, pyritic smelting has a future in the treatment of refractory gold and silver ores.

COAL IN SIBERIA.

The Imperial Commission for the construction of the Trans-Siberian Railroad has recently made a report covering the five years 1892-1897 inclusive. In this report it is stated that on the decision of the Commission to investigate the resources of the country along the line of the road the Ministry of Agriculture and of the Imperial Domains appointed special geological departments for the sections of the Western and Mid-Siberian and the Trans-Baikal and Amour Territory railways. In 1893, the first year of their work,, these geological surveys confined themselves principally to reconnoitering, with the intent of locating the sources of useful minerals in general. In the following years more extended and systematic investigations and excavations were undertaken at the sources thus discovered. In addition, these surveying parties were charged with drawing up a general geological map of Siberia. This geological survey was in general carried out in conformity with the plan laid down for the construction of the Siberian Railway. In the interests of the line, the western section of which passes from Tcheliabinsk as far as Omsk, through a region almost entirely devoid of trees, these geological researches aimed principally at finding beds of coal.

The Kusnezk coal beds in the Government of Tomsk are recognized as a reliable source for Western Siberia; they are 27,000 square miles in extent, and contain the extraordinary rich mines of Koltschuginsk. Beds of anthracite are also found here. Other coal beds were found in Western Siberia and in the Steppes, and of these the most productive proved to be the Karagandinsch and the Kau-Tcheku deposits. Mention also is made of the coal beds at Chibas-Tus, Nazarjevsch and at Kurbatov, near Atchinsk, and also those in the before-mentioned river valleys. This coal loses is practical importance, as it lies far distant from the line of railway, and the unavoidable outlay involved in transporting it to the railway will considerably increase its cost. More favorable results were obtained in this respect near the station of Sudshenka, on the Central-Siberian line, where good seams of coal of good quality were found in the neighborhood of the line. The fitness of this coal as fuel for use in locomotives was fully proved by the Minister of Communications, who personally made experiments with it on one of his journeys through Siberia. Steps will be taken this year for working this supply of coal, and the necessary funds have been allotted by the Commission.

Apart from the Sudshenka coal beds, geological investigations were also undertaken in the section of the Central-Siberian line, in the rich coal fields of Kuskunskija, Kubekovskija and Antropovskija, in the Government of Yenisei, and from the first-named mine 322 tons of coal were taken in 1894, which was made use of by the hydrographical expedition which explored the estuaries of the Yenisei River. The Central Siberian surveying section also discovered a deposit of brown coal in the Trans-Baikal district, near Lake Baikal, at Myssowaja. As it proved to be necessary that the deposits thus discovered should be scientifically examined before further geological investigations were undertaken, the work was suspended temporarily until 1898. As to the results of the Eastern Siberian geological survey, the presence of coal was established at the following places: Near the village of Tcheremchovskoje on the River Angora, in the Government of Irkutsk; at Wyssokaia Dubrava on the River Belaja, in the Government of Tomsk, and along the railway embankment from the town of Nijni-Oudinsk as far as the village of Kimilteiskoje. Of these coal deposits the first-named are especially worthy of attention. The Ministry of Communications intends to work these coal mines for supplying the fuel for the ice-breakers to be used on Lake Baikal, and this will be found to be perfectly feasible, owing to the means of transport afforded by the Angora River. This will also be the case with regard to the brown coal of Myssowaja, in case this coal proves fitted for use as fuel.

In view of the want of wood as fuel in the eastern section of the Siberian Railway, the work of this section of the Geological Survey is to be directed during 1898 to explorations in the Durojev district with a view to finding a supply of coal in the neighborhood of the Trans-Baikal line, where it has been shown that beds of coal exist.

Besides discovering coal for use on the railway, the Geological Survey succeeded in finding various sorts of building material that could be turned to account in constructing the railway, and in some spots different useful minerals came to light. For example, iron ore was found in the vicinity of Myssowaja, and in the hill district of Schelesny, in Nertchinsk; copper ore in the Khirgese Steppes; gold on the rivers Kimbirka and Murma, in the Kansk district of the Government of Yenisei, and on the tributaries of the rivers Soloty Kitat, Barsas and Kilbes, in the Government of Tomsk, and graphite on the Amour River.

The Geological Survey proved to be very useful also to the engineers of the Ministry of Communications in the construction of railway bridges in certain cases, and made investigations in some localities as to the volume of water to be dealt with and the depth at which the earth was affected by the winter frosts.

ABSTRACTS OF OFFICIAL REPORTS.

Parrot Silver and Copper Mining Company, Montana.

The report presented at the recent annual meeting in Butte gives no details of operations, but presents some figures which may be of interest. It covers a period of 11 months, from June 1st, 1897, to April 30th, 1898. The statement of assets and liabilities is as follows:

Stock		$2,300,000
Accounts payable		78,055
Surplus		1,620,998
Total liabilities		$3,999,056
Property and works	$2,344,553	
Treasury stock	1,500	
Bridgeport Copper Co. stock	498,500	
Cash and copper, etc., on hand	723,056	
Stocks and supplies at Butte	58,655	
Accounts receivable	372,792	
		$3,999,056

The investment in new works amounts to $702,574. Work is going on actively at the new smelting works at Parrot, and a ditch is under construction to convey water to the plant. These works will probably not be in operation before the close of the year.

The profit and loss statement is as follows:

Surplus, June 1st, 1897		$1,230,720
Net earnings, 11 months		667,027
Sale of property		5,500
Total		$1,903,247
Dividends paid	$281,841	
Old accounts, written off	408	
		282,249
Surplus, April 30th, 1898		$1,620,998

Development is being pushed actively on the company's properties, and work will soon be begun on other claims owned.

Alaska Mexican Mining Company, Alaska.

This company's report is for the year ending December 31st, 1897. The total quantity of ore raised was 158,005 tons, in addition to which 1,576 tons of waste rock were taken out. The ore was taken out as follows: Adit level, 69,446 tons; 110-ft. level, 71,318 tons; 220-ft. level, 16,554 tons; 330-ft. level, 169 tons; Alaska United Mine, test lots, 518 tons. The development work in drifts, cross-cuts, winzes and upraises was, on the Adit level, 181 ft.; 110-ft. level, 852 ft.; 220-ft. level, 917 ft.; 330-ft. level, 180 ft.; a total of 2,130 ft. The ore in sight at the close of the year was 567,225 tons, without counting anything below the 330-ft. level.

During the year the mill crushed 158,005 tons, an average of 3.79 tons per stamp per day of 24 hours. The cost was 32.17c. per ton. The running time was 346 days, 12 hours, 45 minutes; water power being used for 217 days, 5 hours, 15 minutes, and steam for 129 days, 7 hours, 30 minutes. There were 2,863 tons of concentrates (sulphurets) saved, in addition to which there were 667 tons on hand at the beginning of the year. Of this total of 3,530 tons, 3,473 tons were treated at the Alaska Treadwell chlorination works at a charge of $10 per ton of 2,000 lbs. The chlorination saved 93.7 per cent. of the gold contained.

The mill has 120 stamps; the weight of stamps is 1,020 lbs., the length of drop 8 to 8½ in., and they are run at the rate of 96 drops a minute. The highest monthly record was in May, 14,369 tons crushed.

The total gold obtained was $335,629, of which $226,322 was free gold from the mill and $109,307 came from sulphurets. The average return from the concentrates was $31.18 per ton chlorinated. The average yield per ton crushed was $1.4324 in free gold and $0.6918 from sulphurets, a total average of $2.1242 per ton. As there was an average of 19c. per ton left in the tailings, the average tenor of the ore worked was $2.3142 per ton.

The profit and loss account is as follows: Balance from 1896 brought forward, $15,877; profit for 1897, $87,101; total, $102,978. From this dividends amounting to $72,000, or 8 per cent. on the stock, were paid, leaving a surplus of $30,978 at the close of the year.

The statement of receipts and costs is as follows:

	Total.	Per ton.
Bullion account	$335,629	$2.1242
Mining 158,005 tons	$150,609	$0.9532
Milling and concentrating	50,832	0.3217
Chlorination of sulphurets	33,281	0.2106
General expenses, Douglas Island	4,478	0.0284
San Francisco office	2,275	0.0144
London office	555	0.0035
Paris office	102	0.0007
Consulting engineer expenses	654	0.0041
Bullion charges, freight, refining, etc	3,729	0.0236
New construction	2,013	0.0127
Total expenses	$248,528	$1.5729
Net profit	$87,101	$0.5513

The machinery was kept in good order. Additions were a Worthington feed pump in the boiler-room and a Knowles pump placed on the wharf to pump salt water for milling. This was done to avoid stoppages for want of water in the winter. The power ditch was kept in good repair and open for a large part of the year.

Labor was very plentiful. The daily average of employees for the year was 105 white men and 33 Indians. The average wages paid were, all the white employees being provided in addition with board and lodgings: Miners, $2.50 per day; laborers, $2; drillmen, $2.50; engineers and mechanics, $2.50 to $4; blacksmiths, $3.50 to $4; smiths' helpers, $2; amalgamators, $90 a month; feeders, $70; concentrators, $65; crusher-men, $75; hoisters, $75. Indians received $2 a day, without board.

The extremely low costs of working with high wages and Alaska prices of supplies, shows close and careful working which is very creditable to the management.

DETERMINATION OF LEAD IN ALLOYS.*

By W. E. Garrigues.

In the analysis of brass and bronze the sulphate method for determining lead is sometimes available where the chromate process is not. The chromate process is usually more expeditious than the sulphate, but the reverse can be made the case, as the lead can be obtained directly, without the necessity of first removing the tin, The process is rather delicate, and its indiscriminate use may be objected to on this ground with some reason. It, nevertheless, seems possible to make the separation a clean and satisfactory one. At all events, the observed facts are worthy of being recorded. The description is perhaps best given in the form of an account of an experiment:

One-half gramme of soft solder, containing lead 58.83 and 58.80 per cent. by the usual sulphate and chromate methods respectively, was oxidized with nitric acid, 20 cc. of strong sulphuric acid added, and the solution evaporated to the point of dense fuming. The metastannic acid was completely dissolved. An addition of 80 cc. cold water was made, the solution stirred for a few minutes, and the lead sulphate filtered out on a Gooche crucible. The result for lead was 59.00 per cent. The sulphuric acid filtrate was made alkaline with ammonia, again acid with sulphuric, but this time only until it turned methyl orange a decided red. The result was a voluminous white precipitate, which was filtered out after boiling the liquid, and which on ignition over the blast gave stannic oxide, equivalent to 41.1 per cent. of tin. Total, 100.1. If much more than 80 cc. was used for diluting the fuming acid, or if the diluted liquid was allowed to stand on the water bath for an hour or so, the tin began to precipitate slowly. Antimony, when present in considerable quantity, sustains its reputation by coming down with both tin and lead and partly remaining in the last filtrate besides.

When it is desirable to remove lead and tin in one operation, as, for instance, in the determination of copper by the writer's thiocyanate method, it is essential to bear in mind the above described behavior of metastannic acid toward sulphuric acid and use the latter very sparingly. There is no difficulty in accomplishing the separation of both together in this manner. One can even go a step further—in the determination of zinc, as phosphate—by oxidizing with nitric acid, expelling the latter with as little sulphuric acid as possible, precipitating the copper as thiocyanate, and removing them all in one filtration. Three per cent. sulphuric acid washing, to prevent resolution of lead sulphate, has no effect on either the tin or copper precipitates.

Where small amounts of zinc alone are to be determined in bronze, this procedure, the writer believes, is unequalled for accuracy, neatness and dispatch.

MINE ACCIDENTS IN WEST VIRGINIA.—Chief Mine Inspector James W. Paul reports that during the year ending June 30th, 1897, the total number of men employed at the coal mines of West Virginia was 21,442, of whom 13,218 were pick miners, 652 machine operators, 3,199 underground laborers, 2,047 surface workmen, and 2,306 coke-oven workers. The total number of men killed in coal mine accidents was 62, and injured, 167. This is an average of one man killed for each 346 employed, or to 186,643 tons mined; and one injured for each 128 employed, or for 65,292 tons mined.

GOLD MINING IN KOREA.—A report from Consul-General H. N. Allen to the State Department at Washington says that in 1897 the American Gold-mining operations in Korea assumed large proportions. The concessionaire, Mr. James R. Morse, having made a sub-concession to another American, Mr. Leigh Hunt, this gentleman interested capital to such an extent that the work was placed upon a good footing and the prospects for the present year are said to be excellent. Ten stamps are being added to the present stamp mill; a new 40-stamp mill is now on its way to the mines, and large shipments of other mining machinery are being constantly received from America.

The Germans have a concession for a gold mine, similar to the concession for the American mines. German experts are now in the interior prospecting for the location.

Exports of gold from Korea were $605,206 in 1896, and $1,017,040 in 1897. The imports of gold were only $2,760. The imports of silver were valued at $1,645,386 in 1897, while the exports were $929,443.

STEEL WORKS IN JAPAN.—We have heretofore mentioned the arrangements in progress for the establishment of steel works in Japan. The Government has appropriated already 4,000,000 yen out of a total of 13,600,000 yen, which are to be spent on the works. Of the first appropriation 2,500,000 yen will be spent abroad for machinery.

According to the original program the yearly consumption of steel in Japan was estimated at 120,000 tons, and it was arranged that an establishment capable of turning out 60,000 tons yearly should be designed. But since the termination of the war with China the demand for steel in Japan has been doubled and now amounts to 240,000 tons a year. Such being the case the authorities are said to have decided to enlarge the equipment of the establishment to a capacity of 90,000 tons by April, 1901, and to 180,000 tons later on. As to the supply of raw materials, they are convinced of the necessity of owning the mines themselves, and these must therefore be purchased. At first the program included the manufacture of crucible steel, but as it is found that this is being done in a very satisfactory manner by private factories, the work of the establishment will be confined to the manufacture of Bessemer and Siemens-Martin steel. At first the manufacture will be confined to bars and plates, but as the workmen become more experienced the manufacture of guns will be undertaken. The promoters calculate that when, by April, 1902, the permanent expenditure of 13,600,000 yen shall have been laid out and the arrangements completed, they will be able to clear a good profit and to compete creditably with foreign works.

*Abstract of paper read before the Chemical Section of the Engineers' Society of Western Pennsylvania.

CALCULATING VALUE OF ORE RESERVES.*

By John Clince Little.

The vertical projection of mine workings, in any metalliferous deposit of a tabular nature, may be made to show a good deal more than the bare facts of the amount of work done and ore excavated. We can plot contour lines from level to level exhibiting the number of units of value of ore existing within any given portion of the lode's superfices, provided we have a sufficient detail of lode widths and assay (or mill-test) values, obtained in the course of driving, sinking, and rising. Since underground cost is also, primarily, expressed in units of cost per square or lineal unit of ground spent, value and cost can be quickly compared, and profit or loss at any point can be equally plotted. Surface cost and general charges are, however, expressed per unit of weight of ore milled, but by a simple expedient these costs can be distributed over the area exploited, and the total cost per square unit can be recorded in situ. Thus, to take an example, a lode of gold quartz may be stated to be worth £14 per square fathom, and its total cost of working £10 per square fathom, showing a profit of £4 per square fathom at that point. All these three items are plottable on the section, and the section may be made a permanent record of these facts.

This most obvious manner of "reporting," as formerly practiced in Cornwall and elsewhere, appears to have fallen into disuse for gold quartz mining in recent times, and the present methods, while often supplying full material for calculation of lode values, do not always present the requisite detail in such a form as to afford a concise idea of the actual value. It seems that in the case of gold mines accuracy of conception of statement is very essential. When, however, one comes to try to work out the actual money value of a gold quartz lode from the data supplied, it is found to be a very long business, and this has prompted the writer to suggest the use of a slide-scale, which will facilitate all calculations of value, cost, profit, or loss.

A mine section thus becomes of additional use, for from it we can gather not only: How much work has been done for money expended, and in what directions the excavations are extending relative to the boundaries and to the main lines of communication above and below ground; but also, where the ore is, its value, how far each class of ground extends, the quantity available, the relative proportions in which it should be milled to strike a fair average, what it costs per unit of lode area. This includes the burden of development cost the lode will bear as it stands unbroken; the proportionate mining, milling and general changes cost in situ, and the profit or loss at any point. It may further show what are the future prospects as to profits, and what should be the programme of work and scale of operations.

The scale can be made by any good instrument maker. Suitable dimensions are 1.15 in. by 0.25 in. by 13 in. The graduation can be done by hand with an ordinary ruling pen and Indian ink. Or any one with a sharp knife can make a slide-scale in stout cardboard, but, of course, this will not last so long.

The formula for construction is as follows:

Sterling value per square fathom = inches (quartz width) × pennyweights (per ton) × 0.0448.

This formula requires that 4.73 in. thickness of quartz be accepted as representing 1 ton per square fathom and also that 1 oz. of fine gold = £4.246.

For a convenient unit for the construction of scales of tabular logarithms of inches, pennyweights and pounds sterling, let Log. 10 = 1 = 3 in. This gives a range between Log. 0.05 and Log. 300 of about 11½ in., and the scale can be made to read from 1 in. to 6 ft., from 1 dwt. to 5 oz., and from 1s. to £300. The assay scale is made to slide. The adjustment for the logarithmic constant, 0.0448, is easily done by trial, before commencing to graduate the sterling scale relative to the inch and assay scales. It is best to prepare a table to 50ths of an inch representing the value of each division before commencing to graduate. (The substitution of dollars for pounds sterling can readily be figured out.)

It will be seen that the scale is only constructed to read up to a thickness of 6 ft. Probably few samplers would care to certify to an assay being reliable over a greater width. In case of bigger lodes they would section-sample the hanging and footwall parts, and, even in the case of small lodes, wherever there are markedly distinct lines of mineralization such a plan would be safest. Further, the scale divisions, being logarithmic, are smaller for the higher numbers, but the frequent combinations being either big lode and low assay or small lode and high assay there is a certain amount of compensation; at any rate, the value scale is more accurate for the poorer lode values, and it is, of course, in the case of the poorer lodes that a close margin of profit must be expected. The exact of amount of profit on very rich lodes, on the other hand, is always more or less uncertain, on account of the violent fluctuation in assay value, which is the especial characteristic of such lodes.

One of the chief uses of the scale is that it assists in calculating cost for a given size of lode. This has already been exemplified. It is, perhaps, a new feature to combine surface cost per ton with underground cost per fathom. The writer believes that it can be demonstrated that the fathom unit is more reliable than the ton unit for purposes of calculation, as it possesses the first requisite of a working unit, stability. Cost per ton at surface is certainly a fairly constant figure for any given scale of turn over. But cost per ton underground is subject to wide fluctuations, independent of the scale of output, the chief factor being the varying size of lode. Further, you require to know, not only how many tons are available, but also over how great an extent of ground they are scattered. You then know the amount of work involved, and, approximately, how long it will take.

The writer therefore thinks that the frequent plan of segregating expenses under all heads in terms of average-cost-per-ton is somewhat misleading, at any rate, as regards underground operations. We must

*Abstract of paper in the "Journal of the British Association of Mining Students," Volume XX, No. 3.

always remember that it is the underground work which absorbs the greater proportion of the working capital put into an undertaking, and the practical miner does not talk of tons while he is underground, because he measures his work instead of weighing it. There, therefore, are the reasons for expressing value per fathom and for converting cost to the same rating. It helps us to grasp at once whether a given size and value of lode will cover all expense. Whether the square fathom unit is used in preference to the square foot or square meter is, of course, immaterial. It simply means a suitable alteration of the logarithmic constant. It need merely be noted in passing that many mines which measure their work in lineal feet still retain the square fathom for stoping. The formula may also be altered so that the scale can make any constant deduction, such as a 15 per cent. loss on milling, or a 5 per cent. royalty charge on milling results.

As will already have been gathered, the section can be converted into a chart of either value, or cost, or both combined. The frequency with which samples are taken in the course of a drive does not matter, except that greater frequency should indicate greater accuracy. The points at which samples are taken are laid down on the section. This is done for all rises and winzes, as well as for levels. It then becomes a simple matter to join up all points reading the same value on the scale, and what may be called contour lines of average value are thus traced, which will indicate the probable extent of any class of ore ground between levels and the pitch of the ore shoots. The writer finds it usually convenient to distinguish five classes of ore ground in a mine; more than that are too confusing, and the chief use of a graphic method is to simplfy things. These five classes of ground, barren, poor, payable, good and rich, are distinctively colored on the section when their boundaries have been drawn in the manner described. Thhe character of a mine can then be seen at a glance—where the ore is and its extent, whether it occurs in patches, ore courses, pipes, or well defined shoots. The chief precaution to be taken in tracing areas is to give right of way to the poorer value in any case of doubt.

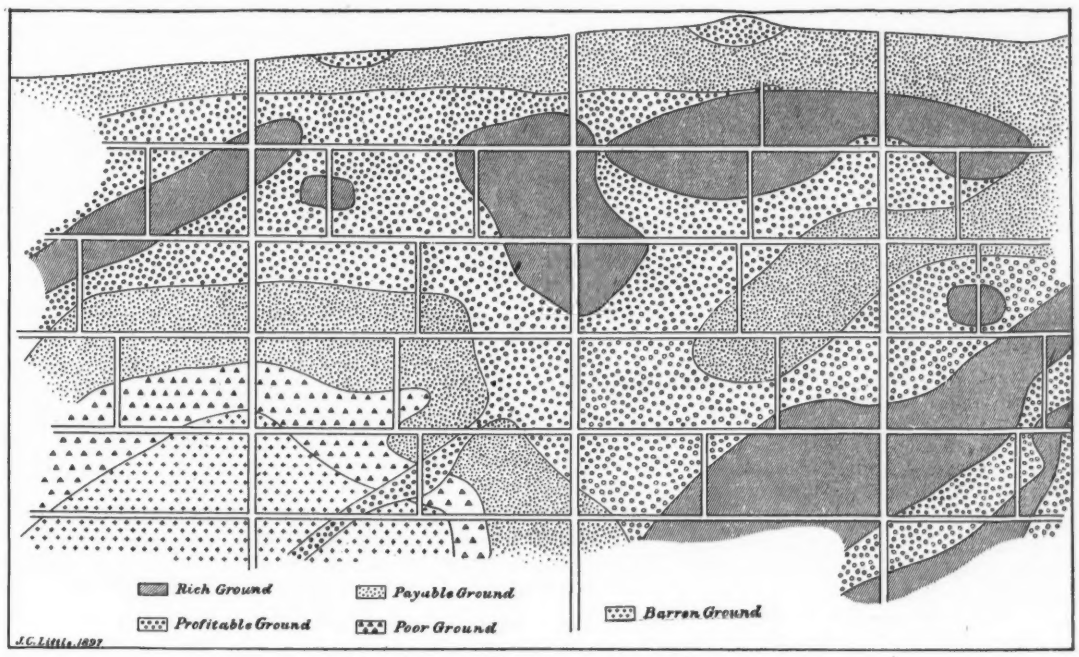


DIAGRAM FOR ESTIMATING ORE IN SIGHT.

Frequently the inability to continue a contour line on the dip of a well defined shoot will indicate that the level beneath has lost the true leader, and a crosscut at that point will recover the main vein. On the other hand, a value chart indicates in a very forcible manner any gradual impoverishment of a vein in depth and the extent of a poor zone. While frequently through this poor zone there will be a limited pipe of good ground, persisting downward, and indicating possibilities of improvement again in depth in a certain direction.

The areas of different classes of ore ground in reserve between levels can be found with a planimeter, or can be traced through on to oil paper and cut out and weighed in a balance. We can thus speedily find: (1) The actual number of fathoms of ore ground of any class in reserve, and (2) the relative quantities of other classes, so that we can determine (3) the proper proportions in which each class should be milled in order to strike a fair average throughout the mine for the duration of any given financial period. In relation to the advantages gained by this systematic way of locating stopes, the stopes themselves are always varying in value, but, by the system of contour lines here advocated, such changes can not unfrequently be anticipated. In a large paying mine, with, say, 25 development points, there will be probably from 50 to 75 stoping points, and it is practically impossible for any supervising engineer to keep track of all these points unless he has some graphic system to fall back on. A mass of tabulated figures produces no lasting impression, whereas a chart gives a birdseye view and can be carried in the memory with ease.

The object of this paper is purposely limited to the speedy manipulation of those figures which may result from careful measuring and sampling. The methods of sampling lodes do not come within its scope. The drawing annexed illustrates the tracing of value lines in a large mine.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

POWERS OF DIRECTORS OF MINING CORPORATION.—It is competent for a board of directors of a mining corporation to enter into a contract of accord and satisfaction—settlement—with a member of the board who is also treasurer of the company.—Troy Mining Company vs. White (74 Northwestern Reporter, 237); Supreme Court of South Dakota.

POWER OF CHAIRMAN TO REFUSE ADJOURNMENT.—The articles of association of a mining company provided that the chairman might, with the consent of the members present at any meeting, adjourn the same from time to time, and from place to place. The court held that such adjournment was to be the act of the chairman, and not that of the meeting, and that he was not bound to adjourn the meeting, even though a majority of those present desired it.—Salisbury Gold-Mining Company vs. Hathorn (Appealed Cases, 268); English Law Court.

DEFECTIVE APPLIANCES IN MINING OPERATIONS.—One engaged in stopping coal cars at a dump by means of blocks, which are ordinarily worn out in about three weeks' use, and who after expiration of that length of time has asked for and been promised new ones, does not assume the risk from using a defective one, where those at hand have become covered with grease and oil and dust, so that the defects are not easily discoverable, especially in the limited time allowed for choosing while a car is approaching. And where such employe has informed his foreman and superintendent that the appliances are unsafe, it is their duty to furnish others that are reasonably safe, and in so doing they are not his fellow-servants, but the representatives of the employer.—Lehigh Valley Coal Company vs. Werrek (84 Federal Reporter, 866); United States Circuit Court of Appeals.

LIABILITY OF EMPLOYER.—A miner was ordered to dig a ditch from the bottom of a drift in a mine, and was told to hurry with the work, and not to timber the shaft until the ditch was completed. His superior was present part of the time and directed the work. The miner was killed by the mine caving in where he was working. The court held this evidence was sufficient to justify a verdict against his employer for his death.—Larson vs. Center Creek Mining Company (71 Missouri Appellate Court Reports, 512); Appellate Court of Missouri.

EXTENT AND USE OF WATER EASEMENT.—A grantee had a right to flood and store water for mining purposes on grantor's land east of a certain embankment of a railroad crossing grantor's land, which embankment grantee used as a dam. Grantor reserved the right from the railroad to exercise mining rights not endangering the roadbed. At the time of the grant of such right to store water, an easement to convey water from certain sources to such land existed. The court held that the grant so made excluded from the easement granted any right to lay pipes to conduct water across the tract, except such as existed at or about the time the grant was made. That, even though the railroad made no complaint, grantor or his successor might be enjoined at the suit of the grantee from constructing boxes through the embankment at a point below where grantee's water line might often come, endangering the whole embankment, and not intended to be used for beneficial purposes.—Montana Ore-Purchasing Company vs. Boston & Montana Consolidated Copper and Silver Mining Company (52 Pacific Reporter, 375), Supreme Court of Montana.

QUESTIONS AND ANSWERS.

(Queries addressed to this department should relate to matters within the special province of this periodical, such as mining, metallurgy, chemistry, geology, mineralogy, machinery, supplies, etc. As it is manifestly impossible to devote space to all the questions and notes constantly received, preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot here undertake to give professional advice on problems requiring special investigation and which should be referred to a consulting expert. Brief replies to questions will be welcomed from correspondents. While names will not be published, we request that all inquirers send their names and addresses. Anonymous questions will not be answered.—Editor E. & M. J.)

Scrap and Refuse Zinc.—What firms deal in scrap zinc and refuse and refuse oxide of zinc? What is the present state of the art of reclaiming scrap and finely divided zinc?—T. G.

Answer.—There is little or no market for waste zinc. Sheet scraps which can be melted down and re-rolled might be sold, but only in limited quantities. As to the second part of your question, full accounts of recent progress in zinc smelting are given in "The Mineral Industry," Volume V., and in Volume VI., now in press.

Deep Shafts.—What are the deepest mine shafts in this country?—H. E. M.

Answer.—The deepest mine shafts, not only in the United States but in the world, are found in the copper mines of Michigan. The Red Jacket vertical shaft of the Calumet & Hecla Company is now down 4,900 ft., and is 12½ by 25 ft. inside timbers, divided into six compartments. The Tamarack Mining Company has two deep shafts, No. 3 being down 4,526 ft., while No. 4 is 4,450 ft. deep. This company is sinking another shaft, No. 5, which is expected to reach a depth of 5,000 ft.

Plating on Cloth or Thread.—Can you tell me some good method of plating cloth or thread with silver, or refer me to some literature on the subject?—N. P.

Answer.—To describe methods in detail would take too much space in this column. There are a number of works on electro-plating, among which we may mention Langbein's "Electro-Deposition of Metals," price $4; Watt's "Electro-Deposition" ($3.50); McMillan's "Electro-Metallurgy" ($3.50); Urquhart's "Electro-Plating" ($2); any of which can be purchased from the Scientific Publishing Company, 253 Broadway, New York.

Iron Sulphide.—I see iron sulphide (antimony slag) is quoted at 5 to 6 cents per pound in your table of prices; it there a large market for it?—G. E.

Answer.—The sulphide in question is a by-product produced in smelting antimony ores. It is furnished by only one firm, and the market is a limited one, the consumption hardly reaching the output. The price given is the current rate in New York. It would hardly pay to ship the article any considerable distance. An advertisement, however, might bring you into communication with buyers and enable you to make special terms.

Graphite.—Can graphite be mined in Brazil for shipment to the United States? Is there a market for it there?—A. R. U., Minas Geraes, Brazil.

Answer.—That there is a market for graphite in the United States is shown by the statistics heretofore published in "The Engineering and Mining Journal." It is at present imported into this country from Ceylon. The present New York quotations are: For lump, $10 per ton; pulverized, $20 to $40, according to quality. Ceylon graphite sells from $40 up. The uses are extending, especially for the better grades. From these prices you can estimate what margin will be left after paying costs of mining and preparation and freight charges. The profit will, of course, depend upon the cost of getting it to market.

Iron Amalgam.—Can you inform me of the cause of iron amalgamating in stamp battery boxes? A quantity of gold-iron amalgam was handed me for purification; it had been taken chiefly from the inside plates of a 5-stamp mill crushing felsite schist containing a fraction of an ounce per ton. The phenomenon only appeared occasionally, when a scum would form unexpectedly, and the amalgam, both inside and outside the boxes and on the plates, would become a dark gray. After retorting an analysis showed it to contain 50 per cent. metallic iron. To recover the gold we roasted and dissolved out the resulting ferric oxide with sulphuric acid, then smelted in the usual way. The battery boxes, stamp-shoes, etc., would become coated with this iron-gold amalgam.—A. J. B. (Sydney, N. S. W.)

Answer.—We can hardly attempt to give you an explanation of the occurrence of gold-iron amalgam which you mention without more specific details. Its origin is very likely to be obscure, and certainly does not appear to be accounted for by the data which you give. Mercury and iron do not combine directly, but iron can be amalgamated by means of sodium amalgam, and in cleaning up batteries wherein sodium amalgam is used the iron is frequently noticed to be slightly amalgamated in spots. In experiments with the Designolles process in the United States, a number of years ago, great difficulty was experienced through the formation of iron amalgam, and amalgamation of iron has been noticed often in pan amalgamation where copper and salt are employed. According to J. C. F. Johnson, of Adelaide, Australia, the amalgam from a West Australia mine (presumably recovered from the battery and plates) contained nearly 70 per cent. of impurities, principally iron, owing to the presence of arsenite of iron in the ore and large quantities of calcium, sodium and magnesium chlorides in the mine water used for milling. Perhaps this information may put you in the way of arriving at the true explanation of the phenomenon in your particular case, but in any event further data concerning it would be of much interest. We should also be pleased to hear from any of our readers who have had similar experiences.

ORPIMENT FROM ASIATIC TURKEY.—The British Consular reports note the export from Baghdad in 1897 of 278 cases, 55,600 lbs. of orpiment. This mineral is an arsenic trisulphide (As_2S_3) and is used as a pigment.

NEW USES OF ALUMINUM.—Aluminum has lately found its way extensively into vibrating and reciprocating machines, both large and small. Here the advantageous use of the metal is entirely a matter of reducing the weight. Probably the best illustration of the use of aluminum in revolving machinery is in using an oil cup on the driving wheel of a locomotive in connection with a driving rod. With the increased speeds that the roads are now aiming to attain, it is necessary to increase the diameter of the driving wheels, and consequently the tendency to break the shank of the oil cups materially increases, and with some of the large engines which have been built cups made of composition are frequently broken. These cups are now, and have been for some time, successfully cast in aluminum, and have given great satisfaction.

LEAD-PLATING IRON AND OTHER METALS.—This process is described as follows by E. von Muenstermann in the "Metallarbeiter," Volume XXIV, No. 21: "The articles are cleaned by brushing with petroleum, rubbed dry and immersed for some time in a lead-lined box containing nitric acid and water, after which they are dried and transferred to a mixture of sulphuric acid, urine and water, and there left until rust and dirt have disappeared. The third stage of preparation consists of immersion in a mixture of hydrochloric acid, water and potassium-mercury iodide in order to facilitate the adhesion of the metal to the lead, into a bath of which (in the molten state) the articles are finally dipped. For wrought iron and other metals the lead bath should have a temperature of at least 470° C., but greater heat is required for cast iron articles.—C. S.

PETROLEUM TRADE IN CHINA.—A report from United States Consul John Fowler, at Shanghai, gives the imports of petroleum into China as follows, in gallons:

	1896		1897	
	Gallons.	Per ct.	Gallons.	Per ct.
American	33,520,649	50.1	48,212,505	48.6
Russian	28,285,000	42.2	36,924,125	37.1
Langkat (Sumatra)	5,151,873	7.7	14,212,278	14.3
Totals	66,957,522	100.0	99,348,908	100.0

The total increase shown in 1897 was 32,391,386 gals., or 48.4 per cent. This was not equally distributed, for, while the gain in American oil was 14,691,856 gals., or 43.8 per cent., that in Russia was 8,639,125 gals., or 30.5 per cent., while Sumatra oil, which is comparatively new in the Chinese market, gained 9,060,405 gals., or 175.8 per cent.

DEEP MINING IN GREAT BRITAIN.—According to Mr. Bennett H. Brough, in a paper read at the Engineering Conference in London, in view of the rapid exhaustion of the thicker and more accessible seams in the British coal-fields, great importance attaches itself to the future development of deep-level mining. The deepest mine in Great Britain is the Pendleton Colliery, near Manchester, where the deepest workings are 3,474 ft. below the surface. This depth has been largely exceeded in other countries. The obstacles to deep-level mining are the decreasing capacity of shafts, the increase of pressure, temperature and cost. These obstacles are considered by Mr. Brough; who concludes that mining in coal seams up to 6 ft. in thickness may be carried on up to a depth of 4,000 ft. In the case of thicker seams, the limit of depth would be less. There were no difficulties peculiar to Great Britain in deep-level mining. If pumping, winding, and ventilation could satisfactorily be dealt with in a Lake Superior copper-mine nearly a mile in depth, there was nothing to prevent the same measure of success being attained in Cornwall.

THE MINES OF LAURIUM, GREECE.—According to a recent British Consular report, the returns of the several companies working the mines of Laurium, in Greece, show that, in spite of the war with Turkey, the mining works have steadily increased. New sources have been discovered of some importance, which have repaid for the explorations made in the north and south districts, good veins of manganese iron and hematite ore having been found, while calamine or zinc ore becomes more and more scarce, and is now reduced to less than half the production of former years. The total output of marketable ores reached, in 1897, 376,597 tons, as against 323,041, or 53,556 tons more than in 1896, as follows: Manganese iron ore, raw, 147,789 tons; manganese iron ore, roasted, 45,000; hematite, 136,811; calamine or zinc ore, roasted, 24,830; silver lead ore, 9,660; rich galena, dressed, 6,915; blend of zinc and lead ore, 3,084; lead fumes, 2,508; total, 376,597 tons. The above total, consisting of purely marketable ores, does not include the annual production of low-grade lead ore grounds and carbonates, which amounted to 409,085 tons, containing 3 to 5 per cent. of lead, which, when dressed by mechanical washing, was reduced to 287,693 tons, and out of which 16,074 tons of pig lead were obtained, containing from 2,100 to 2,915 grammes of silver to the ton. Smelting works are carried on with 26 furnaces in all, which are continually at work in both the French and Greek works.

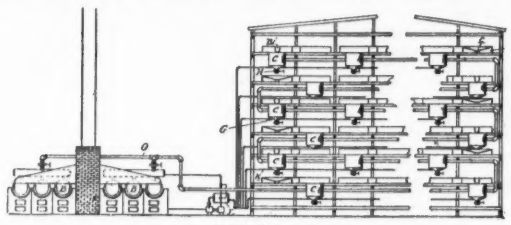
PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending June 7th, 1898.

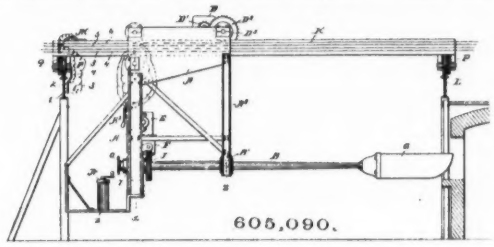
605,082. **SALT MAKING APPARATUS.** Thomas Craney, Bay City, Mich. Combination of a horizontally-extending grainer, a circulating heater depending from the under side at one end of the grainer and communicating with the bottom thereof, an open return-conduit en-



605,082.

tering through the walls of the grainer to a point above the heater, a vertical inflow-pipe connecting the end of the conduit with the bottom of the heater and a mechanical device for impelling the brine in the inflow-pipe.

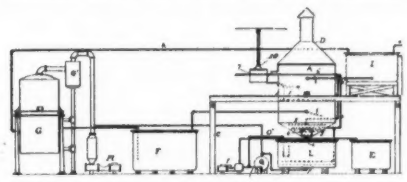
605,090. **ELECTRICAL APPARATUS FOR CHARGING FURNACES.** Joseph P. Eck, Muncie, Ind. This apparatus consists of a charger-track adapted to travel across the face of the furnace, a charger-frame, a charger-bar pivotally suspended within the frame, a rod rotatable in the charging-bar, a cam adapted to enter the wall of the



605,090.

charging-bar and engage the shank of the pan, means for raising and lowering the outer end of the charger-bar, and suitable electric motors in proper circuit for operating the various parts of the apparatus.

605,102. **APPARATUS FOR MAKING CAUSTIC SODA.** William F. Jobbins, Aurora, Ill. Assignor of one-half to Joseph Van Ruymbeke, same place. Combination with a converting or causticizing kettle, a per-

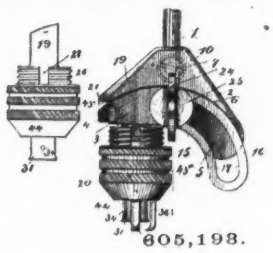


605,102.

forated pipe or pipes located within the kettle, a basket within the kettle for removing the line, and a chute for directing the line into the basket, of a screen-tank located adjacent to the kettle for receiving the sludge therefrom.

605,187. **PNEUMATIC PUMPING ENGINE.** Edward A. Rix, San Francisco, Cal. Combination with the high and low pressure cylinders of a pneumatic engine, a water-pump driven thereby, and a chamber provided with two sets of adjacent passages, whereby the temperature of the high-pressure exhaust-air is raised by that of the water being pumped.

605,193. **MACHINE FOR GRINDING AND POLISHING DIAMONDS.** Leopold H. Stern and Thomas W. G. Cook, New York, N. Y.; said Cook assignor to said Stern. Patented in Belgium November 30th, 1897, No. 131,964. Combination of the supporting-rod, the stationary dop-section secured thereto, and having a segmental recess in its

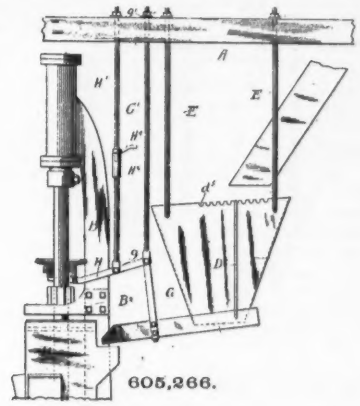


605,193.

lower edge, a movable dop-section, a segmental plate provided with a segmental slot forming part of the movable dop-section, means for securing the plate and stationary dop-section together, and a chuck having a plurality of independently-movable gripping-fingers movable in the direction of their length, extending radially from the plate.

605,217. **PRODUCING AND STORING GAS UNDER HIGH PRESSURE.** Edmond M. T. Boddam, Melbourne, Victoria. Assignor of one-tenth to George Garibaldi Turri, same place. The method consists in successively firing a number of small charges of a smokeless explosive into a receiver or storage chamber of sufficient strength, and automatically stopping the further firing of the charges, when the pressure exceeds the predetermined limit.

605,266. **FEEDER FOR STAMP MILLS.** George Wood, Prescott, Ariz. This apparatus comprises a hopper open at both ends and suspended from a superstructure between an ore-bin and the stamp mill, means for delivering ore to the hopper, a chute for delivering ore from the hopper to the stamp mill, means for suspending the chute under the hopper comprising supporting rods pivotally engaged at their lower ends with the rear end of the chute and engaging at their upper ends the upper edges of opposite walls of the hopper, and a flexible support engaging the forward end of the chute and

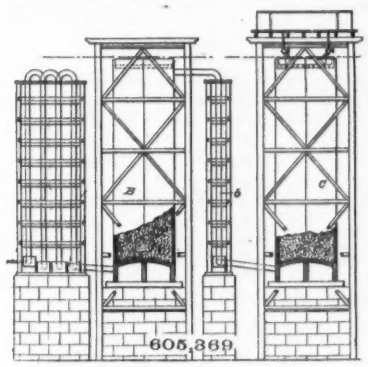


605,266.

movably mounted at its upper end in the superstructure, and means for oscillating the chute comprising a tappet-lever pivoted between its ends and engaging at one end the movable support, and adapted to be intermittingly engaged at its opposite end by a moving part of the stamp mill.

605,302. **TRITURATOR.** Charles L. Trusler, Indianapolis, Ind. Combination, with a revolving support and a mortar detachably secured thereto, of a rotary swinging pestle, a crank-wheel and a pestle-lever connected with and actuated by the crank-wheel and provided with a pivotal bearing through which longitudinal movement of the pestle-lever is permitted and the pestle-lever having a hinge-joint permitting vertical movement and a swivel-joint permitting rotary movement.

605,369. **PROCESS OF MAKING HYDROCHLORIC ACID.** Josiah R. Wylde and Josiah W. Kynaston, Liverpool, England. Assignors to the United Alkali Company, Limited, same place. The process consists



605,369.

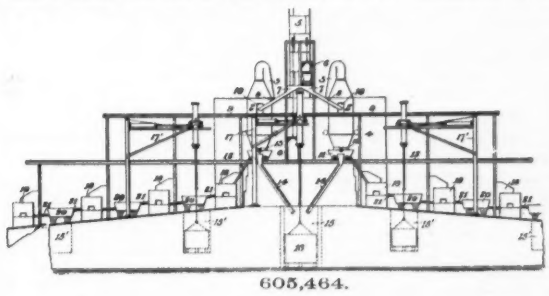
in first cooling the resulting gases, and then passing them in the presence of chlorine through or in contact with coke, in a "dry tower" in which the arsenic is retained, and thence to a wet tower, in which the hydrochloric acid is condensed.

605,378. **PROCESS OF MAKING ALUMINUM SULPHIDE.** Henry S. Blackmore, Mount Vernon, N. Y. Assignor to the Pure Aluminum and Chemical Company, of West Virginia. The process consists in simultaneously conveying into a chemically inert molten bath capable of dissolving aluminum sulphide, a mixture of aluminum oxide and carbon bisulphide.

605,379. **RETORT AND METHOD OF MAKING SAME.** Henry S. Blackmore, Mount Vernon, N. Y. Assignor to the Pure Aluminum and Chemical Company, of West Virginia. A retort of refractory material, such as fire clay lined with an enamel or glaze of lead sulphide.

605,380. **PROCESS OF PRODUCING ALUMINUM SULPHIDE AND REDUCING SAME TO METALLIC STATE.** Henry S. Blackmore, Mount Vernon, N. Y. Assignor to the Pure Aluminum and Chemical Company, of West Virginia. The process consists in simultaneously converting insoluble aluminum oxide into soluble aluminum sulphide while in a molten bath and dissociating the soluble aluminum sulphide by electrolytic action.

605,541 and 605,464. **CONTINUOUS SMELTING PLANT.** William S. Reese and Edward E. Armstrong, Natrona, Pa. Assignors to the Penn-



605,464.

sylvania Salt Manufacturing Company, Philadelphia, Pa. A plant comprising a smelting-furnace, a series of reducing-furnaces, a movable settler for the smelting-furnace arranged to discharge into any of the reducing furnaces, settlers respectively arranged to receive the metal from each reducing-furnace, and means for tapping the charge from each receiving-settler into another furnace of the series.

PERSONAL.

Mr. Thomas Weir has returned to Salt Lake after a month's sojourn in New York and New England.

Mr. George O. Bradley has returned to Salt Lake from a trip through the British Columbia mining camps.

Mr. Elliott Lord is requested to send his present address to the office of the "Engineering and Mining Journal."

President Regis Chauvenet, of the Colorado State School of Mines, will attend the mining congress at Salt Lake in July.

Mr. Bernard McDonald has been spending some time in the Trail Creek Camp, in British Columbia, examining properties.

Mr. Geo. S. Andrus, formerly superintendent of the Sheridan Consolidated 50-stamp mill at Telluride, Colo., has located at Cripple Creek, Colo.

Mr. Samuel Newhouse left Denver for Mexico a week ago. He is to be in Salt Lake City in time to attend the International Mining Congress.

Mr. F. Chappellet, Sr., has resigned the presidency and the management of the Mayflower Drift mine, in Placer County, Cal., on account of ill health.

Mr. Edward I. E. Stetson, chemist for the Leesport Iron Company, of Leesport, Pa., is at Camp Hastings, Mt. Gretna, Pa., with the City Troop, of Philadelphia.

Professor DeKalb, of the School of Mines, Kingston, has been appointed inspector of mines for Ontario by the local government in place of the late Rev. A. Slaght.

Mr. Arthur Keen of Birmingham, England, vice-president of the Institution of Mechanical Engineers, and of the Iron and Steel Institute, is on a visit to this country.

Mr. G. E. Collins, of Central City, Colo., has gone to Nacoochee, Ga., to examine the properties of the Gold Reef of Georgia, Limited, in the interest of London stockholders.

Mr. Clarence Hersey, an old-time assayer, of Leadville, has just returned from California with his family, after a vacation of four months, his first vacation in eighteen years.

Messrs. Clarence McCormick and C. E. Loose are examining California mining properties in which they are interested, and will remain on the Pacific slope for several months.

Mr. E. D. Peters, a leading slate operator, has returned from a successful extended business trip to Europe in the interest of the firm of E. D. Peters & Company, of Pennsylvania.

Mr. John N. Mason, of Chicago, was a visitor to Leadville during the week, looking over some Breece Hill territory, which he hopes to start up with an Eastern company next month.

Mr. William Maddin, assistant inspector of mines for Nova Scotia, has been appointed inspector of mines in Yukon. He will report to the gold commissioner and will leave Ottawa next month.

Colonel George W. E. Dorse, after an absence of several months in the East, is again in Salt Lake, where he will remain for the summer and fall looking after his varied mining interests.

Mr. C. E. Mills, who has been for some time superintendent of the Detroit Copper Company's works at Morenci, recently resigned his position to go to the front with Roosevelt's Rough Riders.

Mr. Solon J. Vlasto, a leading importer at New York, is now in Paris, France, and will shortly visit the magnesite and other mineral properties in Greece. He will return to New York early in October.

Mr. H. G. Rothwell, mining engineer, of Laramie, Wyo., spent a few days in Denver, Colo., recently to purchase some placer mining machinery for the properties which he is working for an Eastern syndicate.

Mr. Charles Butters arrived in Salt Lake City June 17th, to remain a week. From there he goes to California. He plans to return to Utah not later than September to take personal direction of several important metallurgic undertakings.

Captain J. R. De La Mar was to have arrived in Salt Lake City yesterday. During his brief stay in Utah he will have much to occupy his time, for in addition to the big mines of which he is the chief owner he has some large new undertakings on hand.

Prof. Robert Bunsen, of Heidelberg, Germany, has been awarded the Albert medal of the English Society of Arts for the present year "in recognition of his numerous and most valuable applications of chemistry and physics to the arts and to manufactures."

Mr. Ralph Nichols, mining engineer, was in New York this week. He will go to West Australia, where he is to act as general manager of the Boulder group of mines at Kalgoorlie, comprising the great Boulder Perseverance, the Boulder South and the Boulder Bonanza Gold Mining Companies.

OBITUARY.

John L. Mitchell, a pioneer in the oil industry, died at his residence in Franklin, Pa., June 12th. He was born in Center County, Pa., in 1826, and came to Venango in 1836 with his parents, who located there in Allegheny township, near Pleasantville. After oil was discovered in 1859 he became a member of the firm of Rouse, Mitchell & Brown, which developed the old Buchanan farm on Oil Creek. He accumulated a large fortune in his oil and other enterprises. He was an upright man and a public-spirited and liberal citizen.

Wolcott E. Newberry, mining engineer, of Colorado Springs, Colo., died suddenly at Newport, R. I., on June 12th, aged 36 years. He was the son of Prof. John Newberry, of Columbia University, and a graduate of the Columbia School of Mines. He went to Colorado about 10 years ago and became associated with Mr. Hagerman in the management of properties in Aspen. He was afterward sent into Cripple Creek, and it was because of his advice largely that the Isabella and other great properties were opened up. For several years Mr. Newberry had been in charge of the South American Development Company's operations in Ecuador. Some time ago he was taken ill, and while on his return was wrecked off the Cuban coast. His untimely death ends a career full of promise.

Prof. Charles Wilhelm August Herrmann, one of the oldest mineralogists in America, died in New York city on June 20th, in his 97th year. He was born July 3d, 1801, at Altwasser, Silesia, Germany. He was educated at the University of Breslau, and turned his attention to the study of stones with such good effect that, after his graduation, he became professor of mineralogy at the university. He left his chair some years later to study at Mecklenberg, and then returned to Breslau.

Prof. Herrmann came to this country in 1853, and brought with him the collection of minerals which he always believed to be the first imported into America. He opened a shop at Broadway and Houston streets, and afterward made three trips to Germany to collect new stones, most of which he sold to American universities and private collectors.

SOCIETIES AND TECHNICAL SCHOOLS.

Institution of Mining and Metallurgy.—The ninth and last meeting of the seventh session was held in London, June 22d, when the following papers were read and discussed: "The Treatment of Broken Hill Complex Sulphide Ores by Wet Extraction Processes and the Electrolytic Deposition of Zinc," by Edgar A. Ashcroft; "Notes on the Payable Conglomerate Beds Encased in Sandstone, and the Mining Methods in Use for Their Extraction on the Witwatersrand," by A. F. Crosse; "On the Density of Gold and Silver Alloys," by George Attwood.

American Society of Civil Engineers.—The thirtieth annual convention will be held in Detroit, Mich., July 26th to 29th, inclusive. The programme includes four sessions for the reading of papers and discussions; the opening meeting and the yearly business meeting; excursions to points of interest in the vicinity, the most important being a visit to the Port Huron tunnel, and a reception. The Committee of Arrangements of the board of direction is composed of Messrs. George Y. Wisner, J. J. McVean, and Chas. Warren Hunt. The local committee consists of Messrs. George Y. Wisner, chairman; A. B. Atwater, C. E. Greene, D. A. Molitor, J. D. Hawks, H. S. Hodge, J. C. Hutchins and G. S. Williams. The headquarters of the society will be at the Fellowcraft Club House, the use of which has been courteously tendered to the society by the board of governors of the club.

West Virginia Coal Exchange.—The officers elected at the recent session are: W. N. Page, of Ansted, president; P. C. Kubach, Stone Cliff; Enoch Carver, Charleston, and J. S. Hutchinson, Bramwell, vice-presidents; J. R. Seal, of Charleston, was elected secretary and treasurer. Only 40 members were present, the northern part of the State not being represented. President Page delivered the annual address. Papers were read as follows: "A Review of the West Virginia Coal Exchange," by Evan Powell, of Powellton; "A Few Thoughs on Mining," by J. A. Cardwell, of Mayberry; "The History, Development and Progress of the Coal Mining Industry," by D. C. Boyce, of Quinnimont; "Where Shall We Find a Market for Our Surplus Production," by Thomas E. Bird, president of the Winifrede Coal Company; "Coal Mine Management in the Kanawha Valley," by Carl Scholz, of Mammoth; "Forms of Power in Use for Mining Purposes," by G. H. Powell, of Powellton.

Society of Chemical Industry.—The annual general meeting will be held in Nottingham, England, on July 13th, 14th and 15th. Mr. George Beilby has been nominated for president, Prof. F. Clowes for first vice-president, and Mr. George E. Davis, Mr. John Heron, and Dr. Charles A. Kohn for vice-presidents. Sir Robert Puller has been nominated an ordinary member of council, and the honorary treasurer, E. Rider Cook, and honorary foreign secretary, Dr. Ludwig Mond, have been nominated for reelection. Members are invited to nominate four persons, who are fit and proper, to fill four vacancies among the ordinary members of council. Forms for this purpose can be obtained from the general secretary on application. The programme has been arranged and the meeting will be opened by the president, Prof. Frank Clowes, on Wednesday, July 13th, at 10:30 A. M., in the large lecture theatre of University College, Nottingham. Following the transaction of general business and the president's annual address, the society's medal will be presented to Dr. W. H. Perkin, and the day's proceedings will be closed by a garden party tendered by Alderman Sir John Turney, at his residence, "Springfield," Alexander Park, and by a reception and conversazione given by the Mayor of Nottingham, Alderman G. H. Fraser, at Nottingham Castle. On Thursday, July 14th, a visit will be paid to the Sheffield Steel Works, the Atlas Works of Sir John Brown & Company, Limited; the Cyclops Works of Chas. Cammell & Company, Limited; the River Don Works of Vickers, Sons & Maxim, Limited; the Samuel Osborne & Company's Steel Works; the Walker & Hall's Silver Plating and Cutlery Works and show rooms, the Ruskin Museum, the Mappin Art Gallery, the Sheffield Technical School, Firth College, etc. In the evening the society will partake of its annual dinner at the Exchange Hall. On Friday, July 15th, excursions will be made to Lathkill Dale, Haddon, Hall and Chatsworth, and the model village of Ebensor.

INDUSTRIAL NOTES.

M. L. Andrews & Co., Cincinnati, O., have made a shipment of some large boring and drilling machines to England.

J. & E. Greenwald, Cincinnati, O., have an order for an engine and coal washing machinery for some coal mines in Illinois.

The J. A. Fay & Egan Company, Cincinnati, O., are shipping on some large wood working machinery order to points in Sweden, Denmark, Germany and France.

The Rancocas Chemical Company has purchased the large phosphorus works at Centreton, N. J., that were at one time owned by the Diamond Match Company.

R. K. LeBlond, Cincinnati, O., has secured recently some orders for his line of lathes and machine tools, from England, Germany, France, Russia, Denmark and Sweden.

The Horseshoe Phosphate Works, at Walterboro, S. C., were sold at auction June 7th, for $13,346. The plant was purchased by Mr. Thomas Jenny, who holds the mortgage.

The Lane & Bodley Company, Cincinnati, O., has an order for a 250 H. P. engine with shafting, pulleys and other attachments for R. K. LeBlond's new plant in Linwood, O.

Ginbon & Weis, assayers and mining engineers of 85 South Clark street, Chicago, have moved their offices to another suite in the same building, their address now being Room 39.

The Caraleigh Phosphate Company, of North Carolina, has made a number of improvements in the factory and facilities for manufacturing. A dividend of 6 per cent. has been declared.

H. J. McKeoun, Cincinnati, O., has orders for two 20-H. P. hoists for the Cincinnati, O., waterworks, one 20-H. P. hoist for a stone quarry in Butler County, Ky., and one 20-H. P. hoist for a stone quarry at Worthville, Ky.

The Gates Iron Works Company, of Chicago, through its Salt Lake office has secured the contract for the roasting plant, crusher and rolls for the sampler and electric power plant of the Trail smelter, British Columbia.

The Philadelphia Graphite Company, of Philadelphia, Pa., has been incorporated with a capital of $50,000 to manufacture and sell graphite. Incorporators, William Faux, Ellwood N. James, Edward Inskeep, Francis C. Husbands and George H. B. Martin.

A fortnight ago the Gillette-Herzog Company,

of Minneapolis, Minn., in one day turned out the structural iron to fill a $12,000 order from the Anaconda Company, Butte, Montana. The company has just received an order for the structural iron for an office building at Honolulu.

The village of Ridgewood, N. J., has desided to invite water companies to submit proposals for furnishing the village with a water supply upon such terms as the companies themselves may consider satisfactory. Further particulars may be obtained of the village clerk, H. G. Ward.

The Ashland (Ky.) Steel Company has now under construction as an addition to its large Bessemer steel plant a wire-rod mill (Garrett type) of 350 tons daily capacity, also wire-drawing plant and continuous train for making sheet and tinplate bars. All the machinery has been contracted for.

The annual excursion and picnic given by the Jeffrey Manufacturing Company to its employees took place this year on June 11th in the Buckeye Grove, near Columbus, O. Some 400 employees of the company, with their families, were present, and enjoyed the sports and games, accompanied by an excellent dinner.

The Star Manufacturing, Chemical and Commercial Company, of Syracuse, N. Y., has recently been incorporated in West Virginia. The capital subscribed is $50, with the privilege of increasing the same to $100,000 by the sale of additional shares. The shares are held by G. O. Chilton, Charles W. Smith, D. M. Black, E. H. Carwithen and H. H. White.

The Robert Artchinson Perforated Metal Company, of Chicago, is doing an increased business with the mines, necessitating an enlargement of the force. The company recently shipped a large quantity of perforated metal to a mine in Chihuahua, Mexico, this business coming direct from their advertisement in the "Engineering and Mining Journal."

The report of the Chemische Fabrik in Billwarder, vorm. Heil & Sthamer A. G., Hamburg, Germany, for 1897 shows a considerable improvement upon that for 1896, when no dividend was paid. The gross earnings in 1897 were 424,962m. and the net earnings 108,479m., out of which a dividend of 4 per cent. is to be paid and 6,308m. carried to the reserve fund. The company deals chiefly in borax and boric acid.

The United Gas Improvement Company, of Philadelphia, is making extensive additions to its gas-producing plant. These plants are known as the Twenty-fifth Ward and Point Breeze locations. At the Twenty-fifth Ward Gas Works they are building a new scrubber house, 45 ft. wide and 120 ft. long; a purifier house, 86 ft. wide and 180 ft. long. At the Point Breeze Works they are erecting a new boiler and engine room, 220 ft. long and 55 ft. wide; a condenser building, 40 ft. wide and 105 ft. long; a purifier building, 86 ft. wide and 180 ft. long; a generator house, 100 ft. wide and 184 ft. long; a meter house with additions for exhaust and valve room, having a width of 70 ft. and a total length of 223 ft. All of these buildings are of steel frame construction, brick side walls, and slate roofs supported on metal purlins carried by clear span trusses. All the structural steel work for this extensive plant is being furnished and erected by the Berlin Iron Bridge Company, of East Berlin, Conn.

TRADE CATALOGUE.

The Phosphor Bronze Smelting Company, of Philadelphia, issues an amended catalogue and price-list which shows a great variety of wire, sheet and other forms made of its alloys.

Charles E. Billin & Co., of Chicago, have just issued their Catalogue No. 3, pertaining to machinery and supplies for mines and mills. The catalogue has 63 pages, and contains a lot of interesting information to those interested in mining and milling.

Messrs. J. & O. G. Pierson, of Paris, France, issue an illustrated pamphlet describing their gas machines, which are intended to make "poor" or water gas for driving gas engines, for heating and similar purposes. A number of these machines are in use in France, with good results.

The New Conveyor Company, Limited, at Smithwick, England, issues a large pamphlet descriptive of the machinery which it manufactures, including elevators and conveyors for coal and similar materials, coal screening and sorting machinery. The pamphlet also describes the company's works and methods of manufacture. It is accompanied by a number of drawings of a large plant put up by the company at the Aberaman Colliery.

The Witte Iron Works Company, of Kansas City, Mo., issues a very neat illustrated catalogue, descriptive of the gas and gasoline engines which it manufactures. The business is a rapidly increasing one, as these engines are daily coming into more general use. We have often referred to the advantages of the gas engine for mining use. The catalogue gives, besides the descriptions, some practical notes on the management and running of gas and gasoline engines.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind and forward them catalogues and discounts of manufactures in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

Press dispatches under date of June 19th state that all the coal mines in the Jellico District will soon be transferred to an English syndicate, as all that remains to be done is to receive the money and transfer the deeds. Messrs. E. T. Halsey, Hywel Davis and Powhatan Woldridge represented the Louisville interests. The English syndicate secured an option of 90 days on all the mines, all the papers being signed by them to that end. This will close one of the largest coal deals ever consummated in this country. The deal was negotiated by Messrs. McCrosky, Morton and Jerome, who represent the English capital. The total acreage of the Jellico Coal district is about 33,000. The mines all lie in Whitley County, Ky., and Campbell County, Tenn. They cover about 121 square miles, with the exception of a few acres owned by Williamsburg people.

Oil Production.—During May the total production, as represented by pipe line runs, was 4,087,569 bbls., showing an increase of 47,805 bbls., as compared with the runs during April. The total deliveries during May amounted to 4,408,684 bbls, showing a decrease of 71,329 bbls. The total net stocks in possession of the pipe lines at the close of the month was 31,269,764 bbls., and the decrease during the month amounted to 319.921 bbls. The decrease in stocks during April amounted to 438,281 bbls., the shrinkage during May having been 118,360 bbls. smaller than that during the month preceding. The decrease in stocks since the beginning of the year has been 2,282,667 bbls., or an average of 456,533 bbls. per month. The production of Pennsylvania crude is given at 681,119 bbls., which shows an increase of 28,567 bbls. The deliveries amounted to 2,392,830 bbls., showing a decrease of 28,553 bbls. The stocks at the end of the month amounted to 11,663,837 bbls., there having been an increase during the month of 289,483 bbls. The increase since the beginning of the year has been 874,185 bbls. The runs of Ohio oil during May reached a total of 1,406,450 bbls., showing an increase of 19,238 bbls. The deliveries amounted to 2,015,854 bbls., which shows a decrease of 42,776 bbls. The total stocks at the close of the month amounted to 19,605,927 bbls., the decrease during the month having been 609,404 bbls. The decrease since the opening of the present year has been 3,156,852 bbls., being an average decrease of 631,142 bbls. per month.

ALASKA.

A party of gold seekers that left Flemington, N. J., on March 1st, for the gold fields, returned on June 21st. The party tried to reach the interior by way of Yakutat and Disenchantment Bay, but only got as far as the fourth glacier when they found it utterly impossible to go further. They report that there are about 400 on the way to the foot of the glacier who will succeed no better. Gross reports have been circulated about the different districts they found. In one case a man who was said to have brought out $5,000 in nuggets and to have refused $30,000 for his claim, had never been to the gold fields at all.

Prince William Sound Mining and Development Company.—This company has a capital of $600,000, and L. L. Williams of Juneau is president. The company has 13 placer claims in King Solomon basin, near Port Valdes.

Copper Mountain Mining Company.—This company has been organized to work properties at Fort Hidalgo, which are reported to show good copper ore. Development work is in progress.

ARKANSAS.

Montgomery County.

Ouachita Milling, Mining and Investment Company.—This company, with $1,500,000, has been organized to develop the Silver City mines, 40 miles from Hot Springs. The ores are reported to run in lead, silver and copper.

CALIFORNIA.

Butte County.

(From Our Special Correspondent.)

Knott & Boyd.—At this mine, near Centerville, the 5-stamp mill purchased at Quartz Hill is ready for crushing. A drift on the ledge 150 ft. long gives 30 ft. of backs. The ledge is about 3 ft. wide, carrying free gold and sulphurets.

Calaveras County.

(From Our Special Correspondent.)

Rose Hill.—This quartz mine, 1 mile southwest of El Dorado, which has been idle for some time, has started up again under a new management. A road is being graded to the mill and development work has been commenced. A new mill will probably be built very soon.

El Dorado County.

(From Our Special Correspondent.)

Ohio.—This mine, one mile southwest of Grizzly Flat, forms the south extension of the Mount Pleasant mine. Two shafts have been sunk, an incline and a vertical one, and at the 300 ft. level a good vein about 4 in. wide is reported.

Grand Victory.—At this mine, at Squaw Creek, 7 miles southeast of Placerville, the 30-stamp mill has been completed. The plant now includes 10 concentrators and 2 rockbreakers.

Two Channels.—This hydraulic and drift mine, 8 miles northeast of Georgetown, which comprises 1,100 acres, is being worked steadily, and the 10-stamp mill crushes night and day. The gold is coarse; about 40 men are employed.

Kern County.

(From Our Special Correspondent.)

At the Little Butte mine the 3-stamp mill is in operation. A 3-stamp mill will also be erected at the Radamacher mine, to do custom work. The Rand mine is increasing the working force.

Napa County.

Aetna Consolidated Quicksilver Mining Company.—The company reports for four months to June 1st: Gross receipts, $39,600; charges, $26,826; net, $12,773; dividend No. 14, $10,000; surplus, $2,773.

Napa Consolidated Quicksilver Mining Company.—The company reports for three months to June 1st: Gross receipts, $57,600; charges, $32,648; net, $24,951; dividends Nos. 88 and 89, $20,000; surplus, $4,951.

New Idria Quicksilver Mining Company.—The company reports for four months to June 1st: Gross receipts, $61,200; charges, $22,850; net, $38,349; dividends Nos. 6 and 7, $15,000; surplus, $23,349.

Nevada County.

(From Our Special, Correspondent.)

Ben Franklin.—This old group of mines near Allison Ranch was bonded recently to parties connected with the Coulterville mine in Mariposa County. This is one of the oldest quartz mines in the State, but has never been worked below water level. It produced in the early '60's nearly $250,000, but has been tied up for a long time by lawsuits, which are now all settled.

Harmony.—This gravel mine, 2½ miles northeast of Nevada City, has been shut down, the pay ground having been worked out. This property has been worked for nine years, producing $350,000 in all.

Hope.—This mine, 5 miles above Moore's Flat, on Middle Yuba River, is reported to have been purchased by M. W. Mather, in the interests of the Plumbago Mining Company, which company will develop the quartz ledge on the property.

Plumas County.

(From Our Special Correspondent.)

Jo. Rogers & Company.—On the claim owned and worked by this firm, near the head of Mill Creek, 4 miles south of Quincy, a nugget has been found which is valued at $1,200 in gold. Other finds are reported to have been found.

Plumas-Eureka.—This old mine, ½ mile west of Johnsville, at an elevation of 7,500 ft., has been shut down indefinitely.

San Bernardino County.

(From Our Special Correspondent.)

A 20-ton cyanide plant is being erected at Mojave. This can be enlarged when necessary. The assay office has been completed. The ore supply will come from the desert just east of the town.

Shasta County.

Mountain Copper Company.—The strike among the roasters at the company's smelters at Kiswick, lasted but a few days, and ended on June 13th. The men returned to wok at the old wages at $1.85 for 10 hours' work.

(From Our Special Correspondent.)

An Oakland, Cal., company has secured control of the slate deposits in the bed of Slate Creek, near Delta, and a force of men are now quarrying the slate, which will be used for roofing.

Siskiyou County.

(From Our Special Correspondent.)

Blue Gravel.—This drift mine, about 1½ miles south of Yreka, is said to clear from $200 to $300 per day; 10 men are employed, and the property is worked through a shaft sunk 100 ft. to bedrock. The water supply is brought from Greenhorn Gulch and the Yreka Ditch.

Trinity County.

(From Our Special Correspondent.)

Altoona Quicksilver.—This mine, 16 miles west of Castella, is producing about 350 flasks per month. The 10 by 12 ft. shaft is now down over 400 ft. Since the heavy flow of water has been brought under control 80 men have been employed, and a new pack train has been put on between the mine and Castella.

Carlotta Gold Mining Company.—This company, which is working the Carlotta and the Pennsylvania claims, near Carters, is drifting on the ledge from the 200 ft. level. The vein carries some very high grade ore.

COLORADO.

Boulder County.

Midget Mining and Milling Company.—This Boulder company has bought a large mill at Nederland, and the greater part of Nederland townsite. The mill, which was once one of the largest in the State, is being remodeled for concentrating, 15 stamps being already in. It will have a capacity at first of 45 tons a day. The mill is four miles from Eldora.

Clear Creek County.

(From Our Special Correspondent.)

Cardigan.—The Ohio people who recently bought this mine, at Idaho Springs, have put A. H. Brown in charge as manager and superintendent. He was long connected with the Tom Boy mine. He says that some heavy development work will be done, and no effort will be made at production for at least one year. Winzes will be sunk and upraises put through from the adits to the surface. The pay streaks are of good size, running in smelting ore and milling ore.

Crown Point-Virginia.—This property, at Idaho Springs, which was closed down for almost a year, is to be operated by the original owners, who are now in control. Williams & Potter are now taking the water out of the shaft, and later will begin driving levels.

Eclipse.—This silver mine, at Idaho Springs, has been bonded to John Owen and Fred Burns, who expect to begin working soon. The option is for $40,000. The mine has not been worked for several years, but was once a heavy producer. The slump in silver stopped development.

Imperial.—This mine, near Idaho Springs, was sold last week to Himrod & Hudson, owners of the Lamartine mine, for $25,000 cash. The Lamartine has opened into a big body of high grade mineral in Imperial territory and on that vein. The ore is gold bearing. The Lamartine has produced over $3,000,000 worth of silver.

Seaton.—F. S. Goldsmith, the former manager of this property, at Idaho Springs, has retired and is succeeded by J. J. May, of Aspen. The mine is owned in Cincinnati, but a disagreement recently arose between the various interests that resulted in a lack of funds to carry on development.

El Paso County.—Cripple Creek.

(From Our Special Correspondent.)

Dante Gold Mining Company.—At the annual meeting of the stockholders of this company at Colorado Springs, the following directors were elected: Sylvester Johnson, D. N. Clements, C. C. Hamlin, L. L. Aitkin and Oliver H. Shoup. At the directors' meeting Sylvester Johnson was chosen president, L. L. Aitkin vice-president and Oliver H. Shoup secretary and treasurer. The company owns the Dante claim on Bull Hill, which is worked under lease by Hamlin and Reed.

Elkton Consolidated Mining and Milling Company.—The annual meeting of the stockholders was held June 13th in Colorado Springs and the following directors were elected: W. S. Jackson, George Bernard, J. H. Avery, L. R. Erich, Wm. Shemwell, S. S. Bernard and J. W. Graham. The following officers were chosen: Geo. Bernard, president; W. S. Jackson, vice-president; J. H. Avery, secretary and treasurer, and E. D. Marr, assistant secretary and treasurer. The president's report states that the net earnings for the year were about $150,000, in spite of the very large amount of development work that was done. The balance in the treasury is now about $100,000. The shaft has been sunk to the 5th level, and will require 1,600 ft. of levels to open it up. It also requires over 1,000 ft. of work to thoroughly open up the 4th level, and not over one-half of the ground above this level has been explored. The deeper workings are showing up very well, and the mine is in better physical shape than ever before. The flow of water has decreased from 700 gallons per minute, at the date of last report, to less than 100 gallons per minute, at present.

The report of Superintendent W. B. Wilson shows 1,300 ft. of upraising, 1,000 ft. of drifting, 600 ft. of crosscutting, and 100 ft. of shaft sinking has been done during the past 9 months. Ore is now being mined from 20 different stopes. From 50 to 75 tons per day of ore running from $7 to $12 per ton is being added to the mill dump, which has now from 45,000 to 50,000 tons in it. Two new 100-H. P. boilers were put in during the year, also a larger hoister.

Gold Knob Company.—This company, controlled by the Smith-Moffat syndicate, owns the townsite of Goldfields, on which it is prospecting. Several shafts are going down.

Matoa Gold Mining Company.—The annual meeting of the stockholders was held in Council Bluffs, Ia., on June 14th, and the following directors were elected: H. P. Lillibridge, I. S. Harris, W. S. Reynolds, J. F. Burns and E. F. Smith. The report shows that the company's property is worked principally under lease. The report dwells on the advantages of the leasing system. All the ore shipped during the year was taken from two blocks on the Gold Hill property, and amounted to 5,339 tons, averaging 2.4 oz. gold per ton. The royalty received by the company was 20% of the net smelter returns, or $36,093. The company now owns about 60 acres of patented ground as follows: Half Moon, Harlan H. and Gold Pass claims on Gold Hill, and the Arequa tract on Beacon Hill, Arequa Gulch and Grouse Mountain. The treasurer's report shows: Cash on hand June 1st, 1897, $1,360; received from net returns on ore sales, $180,469. Total receipts, $182,056. Expenditures: Paid lessees' portion of net returns on ore, $144,375; other expenditures, $10,505; cash on hand, $27,176; total, $182,056.

Union Gold Mining Company.—This company is doing considerable development work. The station at the 12th level is being cut. The station at the 11th level is cut and the level can be extended when desired. The levels in the mine are worked by lessees, also other property belonging to the company. The shipments for the past week were about 130 tons of ore. The shaft is over 700 ft. deep. Herbert Starkweather of Cripple Creek is in charge of the mine.

Fremont County.

(From Our Special Correspondent.)

A 50-ton mill of the Beam pattern is being erected near Bare Hills, to treat a large body of low grade ore near at hand. Many have doubts of its success.

Mayflower.—Shipments of high grade ore made from this working weekly. A streak of sylvanite, from 1 to 3 in. thick, follows the hanging wall, which runs a little over $1,200 to the ton. The general average of the vein is a little less than 2 oz. Ore is being removed from the 100 and 150 ft. levels.

Warren.—This property has just put in a large plant of machinery, including compressor, and is working three shifts. But little ore is being shipped at present, all attention being given to sinking to the 500 ft. mark.

Gilpin County.

(From Our Special Correspondent.)

Central City.—A No. 9 Knowles pump has been placed in the 350 ft. level of this mine, and daily shipments of mill ore are being made. John J. Reilley is in charge.

Daisy Mill.—D. C. Earl and others, of Perigo, have leased the Daisy Mill of 15 stamps in Gamble Gulch, and have started operations on ore from the Golden Flint property.

Minnesota.—Messrs. Collins Bros. will put up soon a small plant of machinery. In sinking they have opened up a big body of low grade ore, which can be handled profitably at the Rocky Mountain concentrator.

Pierce.—Grading is being carried on preparatory to putting up a shaft house, and a plant of machinery is to be installed. A Central City pool are operating this property, and have opened up some good ore. Steve Hoskin, Central City, is in charge.

Saratoga.—Sinking operations have been suspended at 894 ft. on ninth level, and water columns for the Cornish pump will be put in this week. A crosscut is being started north from the bottom, and as soon as this is in a safe distance sinking will again be resumed. A force of 40 men is employed, and the usual shipments of concentrating ore are being made. Ernest Le Neve Foster is in charge.

Thornton.—Eastern parties operating this property are making preparations to install a small plant of machinery. W. Ballantyne, Central City, is in charge.

Topeka.—E. C. Sterling, of St. Louis, Mo., who recently purchased this property, has placed on record a mining deed conveying the property to the Sterling Gold Mining Company.

Victoria.—Pennsylvania parties who recently purchased this property have put in a No. 7 Cameron pump, and are preparing to sink from 116 ft. to 400 ft. at once.

76 Gold Mining and Milling Company.—The past month's shipments reached 2,085 tons of ore of the usual fair grade. Manager Forbes Rickard says the ore carries a higher value this month throughout the property. For the month of May the total average cost per ton of mill ore was $3.93, which, considering the fact of a mile haul and treatment in a custom mill, is a remarkably low figure. The $3.93 is divided as follows: Mining, tramming, hoisting, timbering, pumping and developments, $1.96; transportation, explosives, office expenses, coal and general supplies, 79 cents; milling, averaging 10 tons to one cord, per ton, $1.18; total, $3.93.

Gunnison County.

Taylor Park Company.—This company owns 3,000 acres of placer ground in Taylor Park, and now has over 50 men at work sluicing and washing dirt. The company is said to have spent $300,000 for development work in the last two years. The company has also 25 men at work developing a group of lode claims on Tellurium Creek.

Tin Cup Camp.—It is said that the Jimmy Mack mine and mill are to start again. The mill will use an amalgamation and concentration process, and will handle ore from the Jimmy Mack and Gold Cup mines. Andrew Lejune is to act as manager.

Lake County.

(From Our Special Correspondent.)

I cannot recall a time in the past six years when the outlook for Leadville was as encouraging as it is now. The fact that a number of the big old-time producers controlled by Eastern capitalists are arranging to start has greatly encouraged our people, who have undergone a most severe strain since the great labor strike here a few years ago.

Bi-metallic Smelter.—A blaze this week started under the floor in the charging room, but was put out with ease, as the smelter is excellently supplied with fire apparatus. The fire did not cause a stoppage of machinery.

Continental Chief.—This property, on Mt. Sherman, at the head of Iowa Gulch, was famous once for its rich and big finds of silver. Tona Michaels, the owner, is making an examination, and informs me that in all probability he will resume active work there at an early day.

Home Mining Company.—This company, composed of Leadville people, has over $44,000 of its $50,000 stock subscribed. The company has secured over 70 acres under lease, and has also purchased the Smith-Moffat machinery on the Penrose and Bon Air. It is expected that the company will be ready to pump early in July. The leased ground includes the Starr, Bon Air, Penrose, Bonus, Alice Placer, Valentine, Pocahontas, A. V. B. and a part of the Orion. The other mines that will assist the Home Mining Company in unwatering the downtown territory include the Coronado, Weldon, Northern and Bohn.

Ibex Mining Company.—Under the management of F. G. Bulkley the company is pushing work in the greater part of its territory, and continues a steady shipment of 250 tons of ore per day, about two-thirds of which is sulphide and one-third oxide. There are 400 men on the pay roll at present, who are earning about $35,000 per month. No. 4 shaft is going deeper, though sinking has been temporarily suspended to do some level work. No. 5 shaft is also being sunk deeper and is down about 860 ft. No. 2 and No. 3 shafts are not being sunk at this time, but the ore bodies are being developed from the various levels. All of the water from the different shafts of the Ibex is drained through No. 3 shaft, which is handling about 500 gallons of water per minute. The experiments made by the new concentrating mill, referred to in my last account of this property, have been abandoned for the time being.

Iron Silver Mining Company.—After several weeks' preparatory work the three Cameron sinkers have been put in and all arrangements completed for starting the pumps on the Moyer claim. It is expected that by July 1st the water will be out of the first level. Manager Robinson thinks that the property can be unwatered in about 90 days, barring all accidents.

Mahala Mining Company.—The annual meeting was not held last week, as the majority of the stock was not represented. As a result an indefinite adjournment was taken and the affairs of the company will continue under the direction of the old officers, who are energetically pushing work on the property, and will have it again on the shipping list early in July.

Maid of Erin Silver Mines Company.—This company's property, the Maid of Erin and the Henriett, is leased to different sets of lessees, who are shipping continuously about 2,000 tons of ore, carbonate and iron, from the Consolidated, Lower Henriett and Adams shafts.

Venture.—The Brussels Leasing Company, headed by Belgian capitalists, is operating this property on Sugar Loaf. On the 13th their fine mill, erected some six months ago at a cost of over $20,000, was totally destroyed. The fire started from a defective flue in the boarding house. The loss is partially covered by insurance. If the mill is rebuilt, it will be much further down the hill, in order to get water easier. In the mine some very big bodies of ore, mostly low grade, have been opened up.

Pitkin County.

Argentum-Juniata Mining Company.—At the

recent annual meeting of the stockholders of the company at Council Bluffs, Ia., there was considerable contest over the proxies; many of those that had first been given to representativies of the present management of the company had been subsequently revoked and given to the contesting faction headed by I. W. Bonbright. The Bonbright faction carried the day and the following board of directors was elected: J. A. Hayes, E. T. Jeffrey, H. T. Rogers, K. R. Babbitt, C. E. Palmer, I. W. Bonbright and E. W. Giddings, Jr. The directors will elect officers at a meeting to be held in the near future at Colorado Springs.

Smuggler Mining Company.—The company recently declared its 52d dividend. Two large concentrating mills, working on a different principle, are said to be treating most successfully the low grade ores of the property. It is reported that there is enough ore now blocked out in this property to keep its present force at work for two years without further prospecting.

San Miguel County.

(From Our Special Correspondent.)

Little Mary.—A rich strike was recently made in this property near the Smuggler-Union mines. It is worked under lease and bond by George and Albert Wearing, and John Howells, of Telluride. The pay streak is from 10 to 18 in. wide, and some of the ore is full of free gold. Two levels are being run on the lead, which will soon be connected by a winze, when regular production will begin.

Mt. Wilson Gold and Silver Mining Company.—Gold ore that runs as high as $750 per ton has recently been opened in the third and seventh levels of the Silver Pick mine, owned and operated by this company. This ore is shipped in carload lots to smelters. The company's 10-stamp mill, connected with the mine by a cable tramway over 5,000 ft. long, is running full, treating from 40 to 45 tons of ore, and turning out 10 to 11 tons of concentrates every 24 hours, an average of 4 tons being reduced to one. Some of the concentrates run quite high, a net return of $3,000 for a carload of 10 tons being frequently received from the smelter. A new tramway is being erected, and Manager W. E. Hawley, of Wilson, Colo., contemplates other important improvements, including, perhaps, an addition to the mill.

Rock of Ages.—George Rohmer, of Telluride, one of the owners of this property, has bonded the interests of his copartners and begun active development. The claim is located in Navajo Basin, near the Silver Pick. Last fall the vein was cut at a depth of about 200 ft. by a crosscut. At the intersection and in the short drifts run each way the vein carried a continuous streak of gold ore about 2 in. wide, that yielded about $6,000 per ton. A quantity of lumber is being packed up for boarding and bunk houses, so that, if desired, operations may be continued throughout next winter.

Silver Chief.—Foundation for a 40-ton concentrating plant is being prepared at this property, in Bear Creek, owned by W. H. Trout, of Cañon City, Colo., and Governor Adams, of Denver. Silver Chief ore is so refractory that the mill will be out of the ordinary. The vein is from 3 to 6 ft. wide, heavily mineralized with gold, silver and copper. There are thousands of tons blocked out and ready for extraction. The mine is one of the oldest in the county, and has been developed systematically for several years past.

Smuggler-Union Mining Company.—This company is extracting and treating about 200 tons of ore daily at the mines and mill. The latter, at Pandora, has 50 stamps and three sets of Cornish rolls. The highest grade is shipped to smelters. From 6 to 7 tons of the ore are concentrated into one, and the concentrates run from $60 to $85 per ton. In addition several outfits of leasers are making regular shipments of high grade ore, and the total output is probably larger than ever before.

IDAHO.

Idaho County.

Gold King.—The cyanide plant at this property, in Dixie Camp, is reported to be running very successfully. E. Gaylord, of Denver, is in charge.

Nez Perces County.

Providence Mining Company.—This company has acquired the Gold Standard claim, owned by H. Wray, of Lewiston, and besides owns five claims in Ruby Creek Camp. M. E. Lawson is manager.

Owyhee County.

De Lamar Mining Company, Limited.—The cabled returns for May state, 2,796 tons of ore were leached during the month, yielding $22,000. The total produce for May was $29,099; the total income, $24,063, leaving a net profit of $5,036.

Empire.—Messrs. Leslie Crutcher and M. H. Jacobs are overhauling things at the mine, and will begin mining when the water is out to the fourth level.

Poorman.—The recent test run of 50 tons through the Pelatan-Clerici plant is reported to have been satisfactory, and the plant is now running to its full capacity of 10 tons a day.

Shoshone County.

Black Cloud.—The owners of this property, at Wallace, say they will have the new concentrator running by July 10th. An agent of the Northern Pacific has secured the balance of the right of way from Wallace to the mine.

Flynn Group.—This group of 16 claims, almost undeveloped, lying between the Black Bear, at Gem, and the Morning, at Mullan, was recently bonded to a syndicate of Wallace and Minneapolis parties. The bond is said to be for $230,000.

MAINE.

Lincoln County.

Waldoboro Granite Company. — The quarry owned by this company about 1 mile above Waldoboro has recently been purchased by Booth Brothers and the Hurricane Island Granite Company. It is said $1,000 will be expended by the new owners in putting the quarry in workable shape.

Washington County.

Red Beach Granite Company. — Seventy-five men have been laid off at these works at Calais, owing to dullness in business following the war.

New Brunswick Red Granite Company.—C. W. Young will take hold of this plant at Calais in consideration of his paying the debts of the concern.

MICHIGAN.

Copper.

Arnold.—Superintendent Clark went recently to Chicago to ship the new rock cars. He stated that the foundation at the mine for the boiler and engine are about completed. The Humboldt exploratory work, he says, continues highly encouraging and the work of sinking a permanent shaft will soon begin.

Baltic.—Work on the railroad to the Atlantic mill progresses rapidly. The fine showing at the different pits continues.

Michigan Copper Mining Company.—This company was organized some months ago with a capital stock of $2,500,000, to operate in Rockland and Greenland townships, Ontonagon County. A. M. Low of Detroit secured options on 4,720 acres of land, owned by the heirs of Benjamin Jeffs. The work of developing the property, it is said, will begin at once. The officers of the corporation are: President, Edwin F. Conely of Detroit; vice-president, William B. Jeffs of Rockland; secretary, Alfred M. Low of Detroit; treasurer, E. H. Flinn of Detroit. The directors are: George N. Fletcher, J. B. Book, Albert Pack, Patrick A. Ducey, Jerome Croul and George B. Stevens.

MINNESOTA.

(From Our Special Correspondent.)

The Johnson Nickel Mining Company has sent a second diamond drill to its lands in Cook County and expects to explore them thoroughly. The company has great hopes of these lands. To get in its first drill early this year, the company had to make a road for machinery through the unbroken forest 35 miles long.

Many experts in transportation matters have been taken over the line of the Duluth & Iron Range road the past two weeks in order to qualify them to testify in the hearing for a demand for lower freights. The company proposes to make a bitter fight and will be backed up, morally, at least, by all other ore carriers.

That famous case, the Section 30 matter, which has been in the State and United States courts for the past 18 years, comes up this week in the Supreme Court of the United States for final hearing on the claims that involve the rights of H. E. James and Morton Miller of Duluth, to 3 40-acre tracts in the N. E. quarter of the section.

Mesabi Range.

Biwabik Bessemer Company.—Pittsburg, Pa., papers state that Alexander M. Byers has sold his half interest in this company to the Brier Hill Iron and Coal Company and the Youngstown Steel Company for a sum approximating $375,000.

(From our Special Correspondent.)

Biwabik Bessemer Company.—At this mine 150 men are at work mining ore for the company, and about 220 more for the stripping contractors, Drake, Stratton & Co.

Lake Superior Consolidated Mines.—At the Hibbing group work is being pushed on the drift to connect the Hull and Rust mines to carry water to the pumping plant of the Hull. Twice before this work has been attempted, and once the water drowned out the men, while a second time foul air stopped them. At the Sellers mine 100 men are mining. A considerable quantity of Sellers ore has been sold. At the Pillsbury, which is the only property operated in fee in the entire group, 100 men are opening the mine, and more will be added as places are found. The mine is to be worked on the milling system. The Adams, at Eveleth, is running slowly, and a considerable number of men has been taken from underground the past two weeks. At the Duluth at Biwabik 100 men are busy and ore is going forward rapidly. This is also a milling mine.

Mahoning Ore Company.—One of the large steam shovels started this week on the second level of the great open pit mine. About 5,400 tons of ore are going out daily, two shovels mining this quantity easily. Stripping steadily continues and the ore area is gradually extending.

Penobscot Mining Company.—This company has determined to push to completion the original plan for operating its mine. Hoisting has been discontinued, and the mine will be unwatered to the bottom and the ore attacked from below. All the pumps are at work and a swift stream 4 ft. wide and 6 in. deep is running steadily through the launder. There has been more trouble from water at this mine than anywhere else in the Mesabi, the mine draining all the Hibbing basin. Only about 20 men are employed, and all about the pumps.

Vermilion Range.

(From Our Special Correspondent.)

Miller & Brown.—These parties are exploring on a part of section 30, town 63-11. They have met with abundant success, and a mine of no small importance seems likely to be found by them. At a depth of 6 ft. they have opened a hard hematite ore like that of the Minnesota best grades. More men have been put at work and the discovery will be extended as fast as possible.

Minnesota Iron Company.—More discoveries of copper metal have been made in the deep mines of this company, and some explorations are going on to determine, if possible, what may be learned about the deposits. The company is working but 900 men at present, and is opening up some new ore bodies that will aid in shipments later on.

Shipments from this range for May and the first two weeks in June are large, as these figures will show: Chandler, 159,000 tons; Minnesota, 93,000 tons; Pioneer, 7,000 tons. For the season to date, these mines have shipped about 310,000 tons.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The past week was a record breaker in the history of the district, and sales shot up close to the $150,000 mark in spite of the drop of $1.50 per ton for top grade zinc ore. Stott City is the only camp producing top grade ore which failed to report, the mines there being still flooded in their lower workings. The mines producing fancy grade ore made unusually large outputs this week, which accounts for the increase in the sales. The spelter market is still firm and offerings scarce.

The Layon smelters at Iola, Kan., were not as badly damaged as at first reported, and are still in the market for zinc ore, only in smaller quantities. So the slump in the ore market was not as bad as expected and was more than offset by the unusually large output of the big mines having first-class ore. Lead ore advanced $1 per 1,000 lbs. For the corresponding week of 1897 top grade zinc ore sold at $21 per ton, and lead ore opened at $21.50 per 1,000 lbs. and closed at $20. The output then fell below that of the past week by 3,224,210 lbs. of zinc ore, while the value was less by $69,408. For the corresponding 24 weeks the output of zinc ore was less by 46,842,610 lbs., but the lead ore output was greater by 106,830 lbs.; the value was greater, however, by $879,828. As compared with the preceding week, the sales show a gain of 142,400 lbs. of zinc ore and 81,440 lbs. of lead ore, and an increased value of $4,831. Following are the sales of lead and zinc ore from the different camps in the district for the week ending June 18th: Joplin, zinc, 1,853,800 lbs.; lead, 384,200 lbs.; value, $35,423. Carterville, zinc, 991,350 lbs.; lead, 125,210 lbs.; value, $15,799. Webb City, zinc, 445,560 lbs.; lead, 36,810 lbs.; value, $6,539. Central City, zinc, 296,720 lbs.; lead, 23,170 lbs.; value, $4,396. Duenweg, zinc, 875,570 lbs.; lead, 156,030 lbs.; value, $14,134. Oronogo, zinc, 539,920 lbs.; lead, 4,340 lbs.; value, $7,472. Aurora, zinc, 810,000 lbs.; lead, 20,900 lbs.; value, $8,116. Galena, zinc, 2,993,280 lbs.; lead, 482,580 lbs.; value, $48,630. Hell's Neck, zinc, 156,660 lbs.; value, $2,193. Carthage, zinc, 86,800 lbs.; value, $1,215. Alba, zinc, 44,700 lbs.; value, $625. Wentworth, zinc, 44,800 lbs.; value, $604. Belleville, zinc, 39,170 lbs.; lead, 110 lbs.; value, $551. District totals for the past week, zinc, 9,178,330 lbs.; lead, 1,233,350 lbs.; value, $145,076. District totals for 24 weeks, zinc, 201,681,330 lbs.; lead, 26,699,410 lbs.; value, $2,838,818.

Arkansas Mining Company.—On the Standard ground, at Belleville, the company has two 8 in. Worthington pumps in on its lease, and will put in machinery to clean the ore.

Condor Mining Company.—On the Kohinoor tract, west of Joplin, is a new mine owned by Geo. W. Dudley, of St. Louis; C. W. Glover, H. Farnham, Bob Wilson, W. F. Snyder and Gib Barber. A drift at 135 ft. is on top of the ore. Nuggets of zinc ore have been taken out weighing 100 lbs. and over in developing the mine. The company has taken four lots south of its mine, which it is developing with a steam drill.

Hutchinson Mining Company.—This company has a lease on 80 acres of the G. B. Young land,

2 miles southwest of Joplin. Four drill holes have developed ore at 120 to 130 ft. The company is sinking a shaft on the North 40, and quite a number of shafts are going down on different parts of this tract by the sub-leasers. The Mascot is the only producing mine; it is owned by Dave Gothelf, Will Landreth and F. S. Tredway.

Mohawk Mining Company.—The company has a 10-acre lease on the Connor land adjoining the McKinley mines. The ground is new and the plant just started. The company employs 30 men, and will make 40 tons of zinc ore weekly.

MONTANA.

Broadwater County.

(From Our Special Correspondent.)

Champion.—This mine, situated at the head of Stray Horse Gulch, and owned partly in Michigan, is about to be sold to Butte parties. Two years ago a Bryan mill was erected, which has never started.

East Pacific.—Eighty men are constantly employed. From 18 to 22 cars of ore are sent to the reduction works each month.

French Bar.—Chicago people are negotiating for this Missouri River placer property, located about two miles below the big dam. A bucket dredge of 1,500 yards capacity is to be built, and a machine put up to concentrate the black sand.

J. F. & C. Mining Company.—Charles E. Gable and C. W. Moorman of Kentucky, have bought a controlling interest in this company, and are sinking 100 ft. on the shaft. The intention is to put in a cyanide plant during the summer.

Keating.—Owing to a bad cave-in of old ground, reaching from the 250 to the surface, the mine and mill are closed.

Little Bonanza.—This property, situated near the Stray Horse, has been taken under bond and lease by Hardy Meaner & Co., who have exposed a 10-in. streak of $100 ore on the 200 ft. level.

Cascade County.

Cottonwood Coal Company.—This company owns two mines at Stockett that are being opened. Compressed air mining engines are to be used. The Litchfield Car and Machine Works, of Litchfield, Ill., furnished the engine for the haulage plant. The daily output now is 6 to 10 carloads. About 200 men are employed in and about the mine. Lewis Stockett is manager.

Deer Lodge County.

Montana Mining Company, Limited.—The company reports the total output for May, 3,050 oz. gold and 20,680 oz. silver, from 6,725 tons of ore crushed, and 11,864 tons of tailings from the dams. The value of the crushings product is $42,200 and of the tailings $29,900. The treatment cost for the tailings was $14,741. The total income was $72,100, and expenses were $59,900, leaving a net profit of $12,200.

Jefferson County.

Clark's Fork Placer.—The dredge boat near Red Lodge has had its suction apparatus replaced by a dipper, and the machinery overhauled. It is ready for work again.

Marysvale Cyanide Plant.—The May output was 4,568 lbs. of precipitates, valued at $32,200. The precipitates went to the Omaha & Grant smelter, at Omaha.

Moulton.—This mine, at Barber, owned by Milwaukee parties, has a 14 ft. vein of lead-silver ore. Work is progressing on a 1,200 ft. tunnel, to tap the vein at a depth of 400 ft. The United Smelting Company has closed a contract for 10,000 tons of iron ore from the old workings. Frank Miller is superintendent.

Wright & Edwards.—This mine, at Neihart, owned by T. C. Powers et al., is under bond and lease to the United Smelting Company; Geo. Midge, superintendent. The shaft is down 250 ft. A 3 ft. vein of ore is said to average 50 per cent. lead and 30 oz. silver.

Lewis & Clarke County.

(From Our Special Correspondent.)

For more than six weeks the different concerns who have arrangements to use power from the big dam on the Missouri have been waiting for some electrical equipment from the East. The new Park Mill, consequently, and other works, are at a standstill.

Umatilla.—This gold property, with a 5-stamp mill, situated about 15 miles from Helena, has been sold to Eastern people, who will enlarge the mill to 10 stamps and put in a Wilfley table.

Meagher County.

(From Our Special Correspondent.)

Great Eastern.—Tom Ash is shipping a car per day to the East Helena Smelter. He has exposed 10 ft. of ore in the new workings.

Jumbo.—Manager Chapin will sink the shaft an additional 100 ft., making it 400 ft. Recent cars shipped to Eastern smelters have given satisfactory returns.

Yellowstone.—Wm. Sheakspar has been granted a 2-year lease on this property at a meeting of the directors, held in Helena.

Park County.

Montana Coal and Coke Company.—J. H. Conrad recently sold his interests at Horr to a New York syndicate. The price is reported to have been $780,000. C. B. Finley, manager of the Soddy Coal and Coke Company, of Tennessee, is to act as manager.

Silver Bow County.

Boston & Montana Company.—This company on June 20th filed suit in the Federal Court against the Montana Ore Purchasing Company for $100,000. The plaintiff alleges that defendant, prior to April 12th, 1898, took large quantities of ore from beneath the surface of certain portions of the Johnstown claim belonging to plaintiff, the value of the ore being $100,000. A restraining order was asked for and granted.

Dernier.—This claim, located west of the Wake Up Jim claim, near Butte, was sold recently for $51,000. The purchaser was T. M. Hodgens, of the State Savings Bank, who bought for outside parties. The sale was made under a decree of the court for a partition of the property. The owners were the Largey estate, G. H. Tong, W. J. Lawlor, the Barstow and Cameron estates and some smaller interests. The claim is in promising territory

Montana Ore Purchasing Company.—The company began another action in the United States Court at Helena against the Boston & Montana Company on June 20th. An injunction is asked to prevent the Boston & Montana Company from taking ore from the Rarus ground. As only a restraining order was asked, no suit at law was filed. The Court made an order citing the defendant company to appear and show cause why a restraining order should not be granted.

NEVADA.

Storey County—Comstock Lode.

Sierra Nevada.—The last official letter says of the Riley tunnel: "During the week we have stoped out from the fourth, fifth and sixth floors 42 mining carloads of ore. The average car sample assay at the mine was, gold $21.55, silver 8.32 oz. Hauled to the Nevada mill during the week 73 tons and 1,125 lbs. of ore, the average battery sample assay of which was, gold $26.92, silver 8.32 oz. per ton. This closes our second run, which consisted of 1,285 tons and 1,625 lbs. of ore, the average battery sample assay of which was $54.61 per ton. Have stopped extracting ore. On the north and south sides of the stopes there yet remains some low grade ore, that will not pay to work. There are also some bunches and stringers of good grade ore in places that may hereafter be gouged out at a small profit, but the stopes are practically worked out above the tunnel level. There may be some ore to the north, south or west of this ore chimney, which we are now prospecting for."

NEW MEXICO.

Bernalillo County.

Coal Mines.—At present the following companies are in operation near Gallup, according to a Denver paper: The Crescent Coal Company, employing 550 men and yielding 65 car loads of coal daily; the Caledonia Coal Company, employing 200 men and yielding 23 cars daily; the Rocky Cliff Mines, employing 30 men and yielding six cars per day, and the United Verde Mines, employing 50 men and yielding six cars loads per day. All told 800 coal operatives are busy.

The Crescent Company is backed by Albuquerque and Los Angeles capital. The Verde Mines, located five miles northwest of Gallup, are owned by W. A. Clark, who has expended $30,000 there since the first of last January. Sixty men are preparing the ground for the machinery plant that is now on its way from the East. The new village is called Clarksville. It is intended to have 50 car loads of coal daily going out of those pits before long and four or five car loads of fire clay also, to do duty in the Clark gold-copper and beet sugar works in Arizona and California.

Alton Mining and Milling Company.—John Armstrong, of Alton, Ill., president of the company, and L. T. Castle, a director, recently visited the company's mines and mill in Hell Cañon, near Albuquerque. They found that the mine had worked out the free milling ore, and the mill could not handle the refractory ore, and ordered the place closed.

Colfax County.

Black Hone.—Baron Von Zuylen has started up this mine and mill, near Baldy.

Franklin Placer Company.—This company is working its ground on Red River, near Elizabethtown, with a full force.

Klondike.—The shaft on this claim, near Elizabethtown, is down 170 ft. Three shifts are at work.

OHIO.

Perry County.

(From Our Special Correspondent.)

W. P. Rend & Company opened the fire district of their Mine 3, at Rendville, a couple of days ago. This portion of the mine was fired about five years ago and all the openings to the fire were securely sealed with cemented brick stoppings. When opened, it gave off considerable black damp and was then clear for about five or six hours, and then began to generate smoke, which showed that there was still fire there. It was then immediately walled up again and the smothering process will be continued.

PENNSYLVANIA.

Berks County.

Reading Granite Quarry.—Dauth & Deem, the owners, have discovered a rich vein of garnet granite lying under the hill on their property at Mohrsville.

Slate.

Cambridge Slate Company.—Operations have stopped, and it may be a month before the company starts work again.

E. D. Peters & Company.—A new boiler, engine and derrick were recently erected at this firm's new quarry.

Provident Slate Company.—Two new hoisting engines have been put in at this company's old quarry. Slate is also being made at the new Franklin quarry.

SOUTH DAKOTA.

Lawrence County.

(From Our Special Correspondent.)

Deadwood & Bear Gulch Mining Company.—This company was organized this week in Deadwood. The officers of the company are: President, Carl Blank; vice-president, William Schroeder; secretary and treasurer, Edward Bowker; general superintendent, Andrew Johnson. The company owns 12 claims in the Bear Gulch district in the northwestern part of Lawrence County. The district has not been developed much.

Glenwood-Sunset Group.—P. L. Gibbs and Charles Waite have sold to a Minneapolis syndicate this group of 13 claims, or 95 acres of land, in the Ruby Basin district. The property is undeveloped, but is surrounded by the Golden Reward, Horseshoe and Deadwood & Delaware companies' mines. The price paid was $300,000. F. W. Johnson, general manager of the company, is on the ground, and development work will begin immediately.

Golden Crest.—Another large body of silicious ore has been opened in this mine, in Two Bit. The property was located by Fritz Webber a number of years ago, and has produced mostly from surface workings $25,000.

Homestake Mining Company.—The Ellison hoisting plant, at Lead, which is being built by this company, is rapidly nearing completion. The engines are of 2,000 H. P., and capable of hoisting 8,000 lbs. 3,000 ft. The recent addition of 200 stamps to the Homestake mills demands an increased output of ore.

Pennington County.

Holy Terror.—John S. George of Milwaukee, Wis., one of the large owners of the Holy Terror and Keystone gold mines, located at Keystone, says, according to a Milwaukee paper, the company will shortly add 10 more stamps to the plant, making a total of 20, with a capacity of about 150 tons of ore per day. The mines are still producing large quantities of high grade gold ore, and the usual dividends are being paid every month.

TENNESSEE.

Fentress County.

Little Crab Oil and Mining Company.—A charter has recently been taken by this company at Allardt for the purpose of drilling for natural gas, oil, etc. The capital stock is $500,000, and the incorporators are A. I. Fry, Bruno Gernt, Charles R. Schency, T. G. Sherman and Max Colditz.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—For the week ending June 18th the following consignments were forwarded: 36 cars, or 1,292,845 lbs., lead-silver bullion; 2 cars, or 89,290 lbs., copper bullion; 70 cars, or 2,724,405 lbs., lead-silver ore.

Beaver County.

(From our Special Correspondent.)

Perseverance Mining Company.—Incorporation articles were filed with Secretary of State June 9th. Capitalization $50,000, shares $1; stock assessable. Head office Beaver City, Utah; annual meeting last Saturday in May. Officers and directors are: Michael Monahan, president; R. R. Tanner, vice-president; W. L. Cook, secretary-treasurer; Jesse Jones, James McGarry, all of Beaver City. Realty consists of Tenderfoot, Potsville, Perseverance, Night Hawk and Frank J. Cannon claims in State Line district.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—For the week ending June 18th the following lots of ore were sent out: Bullion-Beck, 20 cars; Gemini, 7 cars; Centennial-Eureka, 1 car; Grand Central, 9 cars; Uncle

Sam, 1 car; Utah, 2 cars; Swansea, 15 cars; South Swansea, 2 cars; Treasure Hill, 2 cars; Mammoth, 10 cars; Four Aces, 1 car; Sunbeam, 1 car; Dragon Iron, 14 cars hematite for flux. The Eureka Hill shipped 10 cars concentrates; Mammoth 8 cars concentrates and 2 bars bullion; Sioux Mill 2 cars concentrates and 1 bar bullion. Total, 87 cars ore; 20 cars concentrates; 3 bars bullion.

Ajax.—Exploration below 400 ft. level is progressing, and Superintendent Salisbury states he is more than ever satisfied that strong ore bodies will be found below those which made the property famous.

Centennial Eureka.—Recent shipments show 11 to 20 per cent. copper, besides better gold values. It is said new uncoverings on 1,100 level are among the best ever made in the mine.

Homestake.—North drifts at 300 and 500 levels are in 160 ft. and 170 ft. respectively, and each shows a well-marked foot wall, with quartz vein matter. Samples taken a day or two ago averaged 11 per cent. copper, 13 ozs. silver and $1.20 gold. Frank Harris is manager.

Swansea.—Annual meeting was held in Salt Lake City on June 20, resulting in the election of George P. Holman, president; Theron Geddes, vice-president, treasurer, general manager; S. O. Snyder, secretary; William Hatfield, John J. Judson and J. Brinker. The general manager's report shows the property in admirable condition. During the year 4,856 tons of ore, carrying 225,744 ozs. silver and 1,474 lbs. lead—averaging 48.22 ozs. silver per ton, and 14.44% lead—were marketed for $120,137. Twelve $5,000 dividends were paid, the operating expenses were $57,746.38, and the treasury surplus is $18,871. The gross receipts from ore sales were $31,366 more than the preceeding year, while expenses were increased by $10,312. Development for the year aggregated 2,018 ft. Main shaft is now 750 ft.; apparently at water horizon, for at each working started below that depth water comes in. The greatest lateral development on vein—855 ft. —is at 350 level. That dividends will be maintained throughout the current year seems a conservative forecast.

Piute County.

(From Our Special Correspondent.)

Deer Trail.—O. J. Salisbury is advertising for bids for 500 ft. of tunneling, work to begin the first of July. Nothing more is heard of the cyaniding plant, though several chemical metallurgists have reported that this is an excellent cyaniding proposition.

Eagle.—George F. Dalton claims another find of jewelry rock, like that of the early days of the Dalton. Samples brought down from Horse Heaven are brilliant with the yellow metal and shipment is promised within a week.

Sevier.—At Salt Lake City, on June 14th, the stockholder's annual meeting was held, resulting in the election of Charles Lammersdorf, president-treasurer-general manager; Alonzo E. Hyde, vice-president; P. E. McKinney, secretary, who, with Mrs. Lammersdorf and James Long, Jr., make up the directorate. Of the 250,000 shares, 133,197 were represented. Owing to pending litigation, as it was said, no detailed report for the past year was made. Manager Lammersdorf states the property shows well and he hopes matters will be adjusted so that active mining will soon be in progress.

Salt Lake County.

(From Our Special Correspondent.)

Niagara.—Larger shipments of heavy lead products are being sent out and the property looks better than for some time. In all probability the cyaniding plant will not operate this season, as Colonel Heffron is devoting his entire attention to several Mercur enterprises.

Old Jordan & Galena.—The cyaniding annex is in smooth operation. For its capacity, no more complete mill of the kind can be found in Utah.

Winnebago.—On the east and near the top of the ridge, which divides main Bingham Canyon from Salt Lake Valley, a well marked pyritic copper ore zone is exposed. It varies from 2 to 4 ft. thick, and is opened for 40 ft. This new Winnebago uncovering is of more than ordinary moment and is a hint of the extension of the Bingham copper belt to the east.

Summit County.

(From Our Special Correspondent.)

Park City Shipments.—The last shipments reported were for the week ending June 4th. During the two weeks prior to June 19th the following consignments were sent forward: Silver King, crude ore, 1,070,070 lbs.; concentrates, 676,495 lbs.; Anchor, concentrates, 417,980 lbs.; Ontario, crude, 411,450 lbs.; Daly lease, 55,630 lbs. crude.

Tooele County.

(From Our Special Correspondent.)

Chloride Point.—After many days' waiting the electric power is successfully installed. The current comes to the mill at 4,000 volts and issues from the transformer at 250 volts, ample to drive the 50-H. P. motor. On its first trial the machinery moved admirably. Mr. W. W. Orr, the cyaniding specialist, arrived June 18th to assume direction of the beginning of the ore treatment. Barring such incidental delays and minor setbacks which invariably occur in launching a new plant, he is confident of a happy outcome.

Daisy.—Arrangements are consummated to secure water from La Cigale pipe line, with which connection is being made. Manager A. H. Mayne says the mill will begin its initial campaign in a fortnight. The ore is highly siliceous and over 90 per cent. of the gold that can be saved is secured in a 24 hours' leach.

De La Mar.—Most of the mechanical hitches in the running of the mill are remedied and a high percentage gold extraction is achieved. Fully 400 tons are handled daily, which figure will be increased to 550 by the middle of July. It may be said that an annex is to be immediately built to accommodate more tanks, and before Thanksgiving the aim is to treat 750 tons per diem. Manager Hartwig A. Cohen, of all of Captain De La Mar's enterpises, has resigned, to take effect July 1st. There is much speculation as to his successor. The first bullion shipment was sent out June 16th; while the amount is not divulged in value, it was greater than any two consignments ever forwarded from Mercur Camp.

Ophir Hill.—Mine and mill employ 34 men under direction of W. G. Nebeker. Though the mill has been idle a considerable period, it is reported as doing clean work. It handles 100 tons per day, making 30 to 35 tons of lead-silver concentrates.

South Daisy.—Col. H. G. Heffron, who recently secured a short time bond, made the first payment last week. It is probable this means another cyaniding plant within a half-year.

Utah County.

(From Our Special Correspondent.)

Ontario Silver Mining Company.—The 1897 annual report of this famous Park City mine is just distributed among stockholders. The year's output was 23,897 tons of ore, yielding 904,437 ozs. silver, which sold for $538,183. Superintendent Chambers says: "The bullion and ore sold for 1897 brought an average of 59.55c. per oz. of silver contents. The cost of production was 53.65c. per oz., leaving out the computation $40,922 expended in the construction of tunnel No. 2 and in the acquisition of mining property. As a consequence, the dividends declared, amounting to $202,500, were almost entirely paid from the accumulated profits of previous years." The balance in the treasury December 31st, 1897, was $182,256. Since the company was incorporated, in 1877, to January 1st, 1898, there were 562,180 net tons of ore mined, which yielded 33,999,552 ozs. silver and sold for $13,526,694, and to-day the mine is far from worked out. Since last September little has been done, except protect the property and carry on a little development. Lately some 100 tons of ore per week are shipped and a test run at the Marsac mill on tailings seems to be furnishing a satisfactory margin of profit.

WASHINGTON.

Stevens County.

Gold Reef Mines Company.—The officers reside in Spokane. They are: G. B. Dennis, president; Dr. N. Fred Essig, vice-president; S. S. Glidden, treasurer; I. H. Thompson, secretary; W. B. Heyburn, attorney. The company has 11 claims in Eureka District, near Republic camp. The capital stock is $400,000.

Bryan & Sewall.—This claim is near Republic. A strike of ore 25 in. wide is reported.

Republic.—This mine at Republic camp in the Eureka district continues to attract attention. The report has been circulated that the British American Company is seeking an option on the property. The cyanide plant is reported to be giving satisfactory results. Recent development work in the mines has shown the ore body to be even larger than generally thought.

FOREIGN MINING NEWS.

AFRICA.

Transvaal.

The total output of gold in the Transvaal in May was 365,016 crude oz., of which 344,160 oz. came from the Witwatersrand and 20,856 oz. from the other districts. The output of the Witwatersrand for the five months ending May 31st was, in crude ounces:

	1896.	1897.	1898.
January	148,178	209,832	313,826
February	167,018	211,000	297,975
March	173,952	232,007	325,907
April	176,707	235,698	335,125
May	195,008	248,305	344,160
Totals	860,863	1,136,902	1,616,993
Totals, fine oz	702,464	927,712	1,325,934

The increase this year was 480,091 crude oz. over 1897, and 756,130 crude oz. as compared with 1896.

AUSTRALASIA.

New South Wales.

Gold production for the three months ending March 31st is reported at 82,530 crude oz., an increase of 18,898 oz. over the first quarter of 1897. The output this year is equal to 72,214 fine oz., or $1,492,663.

Victoria.

Gold receipts from Victoria at the Melbourne Mint, for the four months ending April 30th, amounted to 261,368 crude oz., an increase of 10,080 oz. over the corresponding period last year. The output this year was equivalent to 240,459 fine oz., or $4,970,278.

CANADA.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

British America Corporation.—At a depth of 200 ft. on the Nickel Plate the management is crosscutting east and west. A force of 25 men is at work. Recently the 35 H. P. hoist formerly on the Columbia and Kootenay was installed at the Nickel Plate.

Great Western.—The shaft is down about 145 ft. without making any important discovery. Superintendent W. S. Haskins in charge.

Ontario—Rat Portage District.

(From Our Special Correspondent.)

Gold Coin.—About 50 tons of ore are being shipped to the reduction works at Keewatin from this property.

Mikado.—The 20-stamp mill is running with about 15 stamps, the breaking down of the Fraser & Chalmers rotary crusher having caused loss of time. A Blake jaw crusher from the Regina mine has been installed in its stead. The last clean-up, from two weeks' running, resulted in about 40 lbs. of gold. A very rich pocket has been struck in drifting on Number 1 shaft. It has been discovered that the clay deposit in the bay bordering the property carries gold, to the extent, it is supposed, of $4 per ton, and it is the intention of the management to ascertain the extent and exact value of the deposit. About 75 men are at present employed at the mine.

Ontario Gold Concessions.—Prospecting is being continued on the concession in Shoal Lake under the management of T. R. Deacon, and the veins discovered are being tested with a diamond drill, and shafts sunk at various points.

Witch Bay.—The Stella mine continues to develop in a very encouraging manner, and at 40 ft. rich quartz has been mined. Captain Triggs is continuing work on the Triggs mine, and has recently discovered another vein 8 ft. wide carrying free gold.

Yukon District.

Steamers are now sailing from Pacific coast ports to St. Michaels, as navigation is opening on the Yukon. There does not seem to be any great rush of would-be gold seekers to secure passage, and the transportation companies are evidently awaiting the arrival of the first boat out with its cargo, when reports will be circulated of the tons of gold it brings. A surer indication of the small demand for passage is the cut in passenger and freight rates. The recently formed Alaskan Traffic Association has practically gone to pieces. The rate from Pacific coast points to Dawson was to be $300. A number of companies, however, have refused to put up the $1,000 guarantee that rates should not be cut, and now passenger rates from Puget Sound by tramp steamers are as low as $125, and will probably go lower.

Three Klondike exploration parties have been sent out by the Dominion Public Works Department. Two parties have started from Edmonton to explore routes through to the headwaters of the Pelly River. The third party will enter from the coast by the Stickeen River. The intention is that the three parties shall meet each other somewhere in the heart of the new gold country, compare notes and report as to the best overland route.

MEXICO.

Oaxaca.

(From Our Special Correspondent.)

San Antonio Mining Company.—A meeting of the stockholders of this company, at Parian, on the Mexican Southern Railroad, was held in Puebla on June 1st, to consider whether it was advisable to purchase a mill for the property. A committee was appointed to examine the subject, and if advisable purchase the necessary machinery.

Sonora.

(From Our Special Correspondent.)

Bacoachi.—B. Bergier is the new manager of the French company operating the mines at Sierra del Oro, near Bacoachi, in the Arizpe district. The 10-stamp mill resumed operations on June 5th, and will soon be turning out bullion.

Esperanza & Francisca Mining Company.—The new dormitories for the workmen and the small building which this company is constructing on its property, at Guacomea, are almost completed. Development work in the mines is being pushed.

COAL TRADE REVIEW.

Anthracite.

New York, June 24.

There is no change to note in the general dullness pervading the anthracite trade of the seaboard States. This does not mean that the amount of coal going forward is exceptionally small, for there is about as much coal moving as last year, but there is no life to the market and business simply drags. Restrictions on production continu, apparently, to be effective, as shown by a decrease in stocks at tidewater during May, and there seems to be an impression that the present month will not show an increase. The coal now going forward is on orders from a wide stretch of country, but the great bulk of the present shipments are to points away from the coast.

It has been stated that certain anthracite dealers and producers have urged the government to adopt anthracite for use in the navy on account of its being more nearly smokeless than bituminous, and less liable to spontaneous combustion. This last feature is one that apparently has some merit, spontaneous combustion in anthracite being practically unknown. There have been cases of spontaneous combustion reported at the mines, but these cases were very likely caused by fires starting from the spontaneous combustion of some refuse in the coal, as for instance, a bunch of oily cotton waste. Again, some fires have been reported as spontaneous that were, no doubt, started by individuals. The exact causes of spontaneous combustion are largely unknown, though in general are probably both physical and chemical—the texture of the coal and its susceptibility to oxydization being determining features. Anthracite certainly has an advantage over bituminous in these respects.

There are other factors than the matter of spontaneous combustion, however, that influence government contracts; one of these is the selling price, and here the advantage is with bituminous.

New York prices are nominally at the schedule rates of $3.50 for broken; $3.75 for egg; $4 for stove and $3.75 for chestnut f. o. b. New York. As a matter of fact coal can be had for less than these figures, but the large companies realize the folly of any wholesale cutting when so little business is being done. The small sizes conitnue scarce and high, pea selling for $2.35@$2.85; buckwheat, $1.75@$2.25, and rice, $1.40@$1.75.

Bituminous.

The soft coal trade in the Atlantic seaboard States is in a state of rather unusual depression. This, in part, is a natural reaction from the hasty buying during the war scare, when every little port that thought it might run short of coal laid in enough to last all Summer.

Shipments to the far East are almost entirely on season contracts. Many consumers in that territory have coal enough on hand now to last till October, and it is not unusual for shippers to get word to send forward no more coal till August.

In the Sound trade there is even less doing, while New York harbor trade has seldom been so flat. In fact, there is so little demand for barges for harbor trade that these boats are, it is reported, taking coal to New Haven and discharging it for 40c. a ton. This is believed to be the lowest figure on record. The all rail trade is rather dull, though a fair amount of coal is moving.

In the coastwise vessel market the condition is altogether anomalous. Freights are low, yet there are no orders coming in. Vessels are in poor supply, and a serious feature is that there is no room for choice as to sizes. Shippers consequently find it impossible to fill an order for, say, 1,500 tons without chartering a vessel several hundred tons larger. Vessels soon to arrive at shipping ports may relieve this situation.

We quote current rates of freight from Philadelphia as follows: Providence and New Bedford, 50@65c.; Boston, Salem, Portsmouth, Bath and Portland, 60@65c; Wareham, Newburyport, Bangor and Gardiner, 65@70c.; Saco, 85c. and towages; Dover, 95c. and towages.

As to prices, all sorts of coal are being offered at all sorts of figures. It is well understood that the name Cumberland, for instance, is used to cover a multitude of carboniferous shortcomings, and so-called Cumberland coal may come from almost anywhere east of the Ohio. Other names that are more specific are misused in the same way. In general, however, fair quotations would be: George's Creek, $1.75 at Baltimore; Pocahontas, $1.75 at Norfolk; New River, $1.75 at Newport News. At Philadelphia the poorer grades sell for $1.20@$1.30, and the best grades for $1.75. At New York harbor ports the poorer grades are $1.50; best grades $2.20.

Birmingham, Ala. June 21.

(From Our Special Correspondent.)

There is nothing new to report this week in the coal market in this district. The miners are about to make a demand on the operators in this section of the State for an advance in wages of 5c. per ton. The operators as yet have given no reply as to whether they will give the advance. A refusal may result in a strike. A conference between the operators and the miners will take place in this city to-morrow. The miners have prepared a scale which will be presented to the operators, and a discussion will follow. The miners demand 42½c. per ton for mining, while 37½c. is paid now at Blocton, Pratt City, Cardiff, Brookside, Blossburg and Brazil; 45c. at Helena, where 40c. is paid now; 37½c. at Blue Creek, where 28c. is paid now.

There is much coal being shipped to the coast, while the Louisiana and Lower Mississippi markets are picking up wonderfully and are calling for more and more coal every month, keeping the Walker County mines busy. These mines are not represented at the meeting held here this week.

Chicago. June 22.

(From Our Special Correspondent.)

Anthracite Coal.—Sales have been no better. Apparently there is but little effort on the part of producers to press sales. The probability of an advance in the circular rate July 1st has brought but few buyers into the market. Agents do not care to sell coal for future delivery at prevailing prices. The retail trade is doing little.

Bituminous Coal.—Coal continues to be bought in a small way, most of the large concerns here having supplies to last them some time at present rate of consumption. There is a large excess of soft coal coming to town over demand. Prices are moderately firm, but there cannot be much profit in soft coal at the present time.

Coke continues in limited demand; receipts are larger, with prices somewhat lower.

Cincinnati. June 21.

(From Our Special Correspondent.)

There has been some increase of inquiries for coal for domestic purposes and public buildings. July and August are the months in which lowest prices can be secured for next winter's needs, and this gives a little more activity to the trade. There is a fair demand for coal for steam purposes among local manufacturers. The orders now coming in from outside points are mainly small. There is some restlessness among the Southern coal miners and the feeling here to-day is that on July 1st there will be a strike among the miners in the Jellico mines for higher wages. The stock of river coal here will not last more than 90 days, but more is on the way down the river. Lump coal is $1.75; run-of-mine, $1.50; nut and slack coal, $1.15; New River and Pocahontas coal, $2.75; on the river in large lots Pittsburg and Kanawha coal is 5c. per bu.; nut and slack coal, 3½c. per bu.

Coke.—The market is quiet. The large buyers have now good stocks on hand and more due them on contracts. There are many small users who have enough to last some time. What orders come in are few at best and mainly for one or two cars. Little demand now for domestic use. Prices unchanged and steady at $3.10@$3.40, delivered on cars in Cincinnati.

Pittsburg. June 23.

(From Our Special Correspondent.)

Coal—The coal miners and coal dealers are not disposed to let Spain and the United States do all the fighting; they propose to take a hand themselves, and are making arrangements to that end. In the Third Pool the miners have appointed committees to visit the pits to try to prevent men from going to work. The strike is almost general at the river mines, where the full prices is not being paid. A call was issued by John W. Hays, general secretary of the Knights of Labor, for a meeting June 28th. This is a movement of the Knights of Labor to get control of the mining population and may mean war between the two organizations. President Dolan proposes to enter upon a vigorous campaign, establishing camps and other necessary legal obstructions that he has a right to employ, in persuading men to cease work at the arbitration price.

A combination of retail coal dealers is now under way, and promises to become established successfully within a few days. For several weeks the river coal dealers have been quietly working on a plan which promises to bring about this combination; a meeting was held when it was discovered that three of four firms were disposed to hold out against the movement. Another meeting is scheduled, when it is believed the matter will be brought to a head.

The rise in the Ohio was not sufficient for coal shipping, but made enough water to enable boats with empties to reach port. The coal operators are talking of laying up the towboats until fall. The miners are still making arrangements for a strike.

Connellsville Coke.—Trade for some weeks past has showed but little change; a falling off in production may be expected, as several of the furnaces have gone out of blast and others are preparing to follow. The coke business is governed to a great extent by the iron and steel trade. July, as a general thing, is a dull month; the coming one is expected to be of a similar description. Trade of the region for the week shows 14,678 ovens in blast, with 4,682 ovens idle. In the running order of the ovens in blast 5,546 ovens made four days, and 50 ovens, the Semet-ovens made four days, and 50 ovens, the Semet Solvay by-product plant, seven days, an average of 5.15 days, as against 5.24 days the week previous. The H. B. Frick Coke Company made five days at 23 plants, and four days at two plants. The McClure Coke Company made five days at seven plants; W. I. Raing made six days at all plants.

Shipments for the week amounted to 7,844 cars; they were distributed as follows: To Pittsburg, 2,920 cars; sent West, 3,890 cars; shipped East, 1,074 cars; total, 7,884 cars. Prices unchanged.

SLATE TRADE REVIEW.

New York, June 24.

Though many plans have been filed in the Building Department and some structures are already under way, architects are specifying only for enough slate to satisfy immediate wants, and for the business that is offering competition is much in evidence. Sales agents who represent the large concerns are closely in touch with the building trades, and they are doing much to induce architects to include slate in their specifications. Recently several lots of structural slate were sold by a large maker for an uptown building. Roofing slate is finding a good market abroad, and occasionally we hear of a large order for home consumption, though considerably more business could be done here if aggressive steps were taken. Quarrymen are more or less skeptical and seem to look to the development of the export trade as their only salvation. Fortunately at this time freight rates are easier, and shippers of slate are taking advantage of this by increasing their consignments to Great Britain and the Continent. From June 8th to 22d., inclusive, the exports were as follows: To London, 126 car loads roofing and 27 cases manufactures; Liverpool, 72 packages and 210 crates slabs and 1 car load roofing; Hull, 10 car loads roofing; Manchester, 20 tons and 4 car loads roofing; Bristol, 18 car loads roofing; Newcastle, 9 car loads roofing; Leith, 76 pkgs., 4 car loads and 2 tons roofing; Bremen, 15 tons and 2 car loads roofing; Copenhagen, 406 cases school slates; Australia, 24,200 pieces roofing and 99 cases other slate; British Africa, 115 cases; Surinam, Dutch Guiana, lot roofing; Montevideo, Uruguay, 6 cases; Kingston, Jamaica, 7 cases; Argentine Republic, 25 cases; British West Indies, 14 cases; Mexico, 28 cases; Newfoundland, 8 cases; St. John, New Brunswick, 2 cases. The total value of these shipments is $51,477. The school slates consigned to the far East are intended for the missionaries.

The latest quotations per square for No. 1 slate of standard brands, f. o. b. at quarries, are given below:

Prices of Roofing Slate.

Size, inches.	Monson or Br'n ville.	angor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Gr'n.	Red.
	$	$	$	$	$	$	$	$	$
24 x 16...	.....	...	....	.....	....	4.75	....	....	....
24 x 15...	.....	...	....	.....	....	4.75	....	....	....
24 x 14...	6.10	3 50	3.00	3.25	3.50	4.85	2.90	4.50	....
24 x 13...	.....	...	....	.....	....	4.85	....	....	....
21 x 12...	6.60	3.50	3.00	3.25	3.50	5.00	2.95	4.50	.....
24 x 10...	.....	....	....	.....	.....	5.00	....	....	.....
22 x 14 ..	6.10	....	.....	.....	.....	5.00	2.90	.....	4.50
22 x 13...	.....	....	....	.....	.....	5.00	....	....	....
22 x 12.	6 60	3.60	3.00	3.25	3.50	5.00	2.95	4.50	...
22 x 11...	6.50	3.60	3.10	3.25	3.75	5.00	2.95	4.50	.....
20 x 14...	6.40	..	.....	.....	..	....	2.90	.....	.....
20 x 13...	..	....	....	....	....	5.00	....	....	.....
20 x 12...	6 90	3.60	3.10	3 25	3.75	5.00	2.95	...	.....
20 x 11...	6.80	....	....	3.50	....	5.00	2.95	....	....
20 x 10	6.80	4.25	3.35	3.50	3.80	5.10	3.05	4.80	10.50
18 x 18...	.....	4.50	....	.....	....	....	....	....	.....
18 x 14 .	6.50	..	....	....	....	....	....	....	.....
18 x 12...	6.80	3.60	.....	3.25	....	5.00	2.95	....	.....
18 x 11...	7.00	....	....	....	....	5.00	2.90	4.50	....
18 x 10...	7.20	4.25	3.35	3.50	3.80	5.10	3.05	4.80	10.50
18 x 9...	7.10	4.40	3.35	3.50	3.80	5.10	2.95	5.00	10 50
16 x 16...	7.00	4.50	....	....	....	....	....	....	.....
16 x 14...	....	4.50	....	....	....	....	....	....	.....
16 x 12...	6.80	3.60	....	3.25	..	.....	2.90	..	.....
16 x 11...	6.90	..	....	....	....	....	....	....	.....
16 x 10...	7.10	4 00	3.25	3.50	3.80	5.00	2.90	4.80	10.50
16 x 9..	7.00	4 25	.....	3.50	3.80	5.10	2.85	5.00	10.50
16 x 8...	7 20	4.25	3.25	3.50	3.80	5.10	2.85	5 00	10.50
14 x 14..	7.00	4.50	....	....	....	....	....	....	.....
14 x 12...	6.50	..	....	....	.....	.....	2.85	....	.....
14 x 10...	6.60	3.60	3.25	3.25	3 75	...	2.85	4.80	10.50
14 x 9....	6.50	..	....	.....	3.40	4.85	2.85	4.80	10.50
14 x 8...	6 60	3.75	3.25	3.25	3.40	4.85	2.45	5.00	10.50
14 x 7...	6.40	3.90	3 25	3 25	3.40	4.85	2.15	5.00	10 50
12 x 10...	5.80	3.50	..	....	.....	4.60	2.45	4.00	.....
12 x 9...	5.60	..	....	....	....	4.60	2.15	....	....
12 x 8...	5.50	3.25	.....	3.25	3.25	4.60	2.15	4.00	9.00
12 x 7...	5.00	3.25	.....	3.25	3.25	4.60	..	4.00	9.00
12 x 6...	4.80	3.25	.....	3 25	3.25	4.60	.1.95	4.00	8.50
11 x 10...	.....	3.50	....	.....	....	....	....	.....	.....
11 x 8...	4 50	....	....	....	....	....	....	....	....
11 x 7...	4.00	....	....	....	....	....	....	....	....
10 x 12...	.....	...	....	.....	....	....	....	.....	.4.50
10 x 11...	....	..	....	....	....	....	....	.....	4.50
10 x 8...	4.00	....	....	....	....	....	....	.....	.6.50
10 x 7...	.....	....	....	....	....	....	....	.....	.6.50
10 x 6...	.....	....	....	....	....	....	....	.....	.6.50
9 x 7...	3.50	....	....	....	....	....	....	.....	.....

A square of slate is 100 sq. ft. as laid on the roof.

In Brownville and Monson delivery quotations

can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3-16 in. thick. Purple sizes run 24 by 12 to 14 by 7, and vary from $3.75 to $4 per square. Variegated and mottled are the cheapest roofing slates, at $2.25@$2.90 per square, according to size.

IRON MARKET REVIEW.

NEW YORK, June 24, 1898.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending June 25, 1897		Week ending June 24, 1898		From Jan., 97.	From Jan., '98.
	F'ces.	Tons.	F'ces	Tons	Tons	Tons.
An'racite	24	13,800	26	17 600	436,086	467,050
Coke.....	107	152,900	144	202,225	3,685 414	5,189,650
Charcoal.	15	3,450	20	6,925	126,086	141.350
Totals..	146	170,150	190	226,750	4,247.586	5,798,050

There are more signs of the near approach of the dull season. A considerable volume of business is reported from the West, but upon the whole orders are not coming in as fast as deliveries are made, and there is a pretty sharp competition for business, which prevents any improvement in prices. Buyers recognize the situation, and are holding off, quite confident that they will lose nothing by doing so. It is not at all unlikely that we shall see a waiting market for a few weeks to come.

The Alabama pig iron producers have made a general reduction of prices. No. 1 foundry is now $7.25 at furnace, with 25c. a ton off all other grades except gray forge. That is still quoted at $6.50, though it is said that large orders have been taken at $6.35.

The Western Bessemer pig combination is putting several furnaces out of blast, and is apparently determined to carry out its plans, so that a trial of strength with the steel men may be looked for. So far, there has been no increase in prices.

Railroad business on the whole has been disappointing. The railroad people have bought a good deal of material, but orders have not been on the scale which many expected.

Export trade continues good, and there have been some changes in ocean freight rates which rather favor the business.

The organization of the new company, which is to build a large basic steel plant at Ensley, near Birmingham in Alabama, is referred to in our Birmingham letter.

The air is full of rumors, as is usual at this season, when there is little to do but talk. Most of them have very little basis.

New York. June 24.

There is but little to note in the local market. It is quiet and dull, with little prospect of any great improvement for some time.

Though the high ocean freights interfere greatly with foreign trade, there is considerable manufactured material going abroad. We note a shipment of $10,000 worth of paper-making machinery, and a purchase of 2,000 tons of steel rails for Mexico; while shipments to South Africa recently have included $30,000 worth of machinery and $15,000 worth of car material, and to Argentina $21,000 worth of railroad cars, and $10,000 of other railroad material.

Pig Iron.—Prices for Alabama brands have felt the collapse of the agreement among the furnaces, but figures are little lower than those that have prevailed. It is said, however, that Virginia irons are 25c. lower. Locally, business goes on in rather a small way and sales are less. The foreign trade has fallen off greatly and will not pick up till the cotton crop goes abroad. Quotations are, for Northern brands, tidewater delivery, No. 1 X foundry, $11@$11.50; No. 2 X foundry, $10.75@$11; No. 2 plain, $10.25@$10.50; gray forge, $9.75@$10.25; Southern brands, New York delivery; No. 1 foundry, $10.75@$11; No. 2 foundry, $10.25@$10.50; No. 1 soft, $10.75@$11; No. 2 soft, $10.25@$10.50; No. 3, $10@$11; basic, $10@$10.25.

Bar Iron.—There is no improvement to note in prices, while demand is practically unchanged. In large lots on dock, common can be had for 1.02½c.; refined, 1.10c.

Steel Rods.—There is very little, if any, demand for rods over the territory tributary to New York.

Plates.—The demand for steel plates in the local market is pretty light, but Eastern mills are reported to hold pretty closely to the quotations. Sheared plates at tidewater in large lots are quoted 1.30@1.37c. for No. 10 to 3-16 and 1.20@1.30c. for heavier, with some mills shading these figures slightly. Shell is 1.25@1.30c.; flange, 1.35@1.40c.; Universals are 1.15@1.20c.; charcoal iron plates, 2.25c. for shell, 2.75c. for flange, and 3.25c. for firebox. Rivets are 2.25@2.50c. for iron, and 1.75@1.85c. for steel.

Structural Material.—There is as yet but little change in the outlook, though prospects are better. Municipal work will take a considerable amount of material. Quotations for large lots at tidewater are unchanged; beams, 15-in., 1.30@1.35c.; angles, 1.20@1.25c.; tees, 1.35@1.40c.; channels, 1.30@1.35c.

Steel Rails and Rail Fastenings.—The market remains quiet with few orders in sight. Quotations remain: Standard sections, $18@$19; girder rails, $23. Lighter rails are quoted: 12-lb., $24; 10-lb., $22; 20-lb., $22; 25-lb., $20; 30-lb., $20; 35-lb., $20; up to standard, $19; with the usual 10 per cent. advance for small orders; all f. o. b. mills. Track fastenings are quoted: Angle bars, 1.10c.; fish plates, 1.15c.; spikes, 1.40@1.50c.; bolts, 1.60@1.75c.

Wrought Iron Pipe.—The market is very dull with but few orders coming in. The high ocean freights keep down any chance of improvement in export business.

Nails.—The market is practically unchanged. Wire nails are $1.45 for large lots on dock with cut nails $1.20.

Old Material.—The demand remains rather slack, but holders are maintaining prices pretty well. We quote: Old iron rails, $11; old steel rails, $9@$9.50; wrought scrap, $10@$10.50; hammered car axles, $14@$14.50; wrought pipes and tubes, $7.50@$8; borings, $6@$7; turnings, $7.50@$8; burnt iron, $5@$6, New York deliveries.

Birmingham, Ala. June 21.

(From Our Special Correspondent.)

Quotations on pig iron in this district seem to have taken a small tumble, for publication of figures places No. 1 foundry now at $7.25, with a 25c. decrease on all prices with the exception of gray forge, which is yet quoted at $6.50, though it has been sold for 15c. less than that amount. There is much iron being shipped from the district and quite a number of orders are being booked also. The furnaces are making considerable iron and the indications are bright with the iron makers. The Tennessee Coal, Iron and Railroad Company last week blew in No. 4 furnace at Ensley, but extinguished the fires in No. 3. The change was found necessary on account of some repairing needed about the last named furnace. Men were put to work immediately on No. 3 furnace, however, and it will be relined entirely. No. 4 furnace is turning out as much iron as did its predecessor, and so there is no difference in the output in the district. There is considerable iron being shipped for export purposes. A prominent railroad official, in speaking of business along his line, stated a few days since that a large amount of iron was being sent to the coast for exporting purposes. The domestic trade is expected to keep up with the stride that it has been taking lately. There is much iron being shipped to Northern and Western States and many inquiries are being made of the iron makers in Alabama. The demand is said to be good, though at the off-prices mentioned above. It is not believed that much cutting in prices will be resorted to by the furnacemen on account of the collapse of the Southern agreement, though some say that it is causing a number of inquiries to be sent this way. There is much iron in some of the yards, which has been collecting by degrees. Both the furnaces at North Birmingham, which belong to the Sloss Iron and Steel Company, are in blast. Only one of the Sloss city furnaces is in blast. There is much iron moving from the warrant yards in this district.

There is much work still being done at the rolling mills in this district. On July 1st the mills will shut down for a short time to allow necessary repairs and to give the manufacturers a chance to sign the scale as formed by the Amalgamated Association of Iron and Steel Workers. There is no doubt that the scale will be signed, and the mills will not be closed down long for repairs; before the end of July the Birmingham mills and perhaps the Gate City plant will be ready to go in full blast again. The shipping clerks at the mills have their hands full keeping up with the demand and they will be kept busy all during the summer.

There is much work yet at the various foundries, machine shops and other industries using pig iron. The warm weather has not affected the trade with these concerns as yet.

At last there seems to be a certainty that a steel mill will be built in the Birmingham district. The Tennessee Coal, Iron and Railroad Company, through another corporation, its child, known as the Alabama Steel and Shipbuilding Company, which was formed last Saturday, will build a $1,000,000 steel plant at Ensley City, near here, at once. The new company will operate under a special charter, very liberal in its terms, granted by the last General Assembly of Alabama to James Bowron and G. B. McCormack, who are large stockholders in the company. The following were elected directors in the company: J. K. McDonald, N. E. Barker, P. H. Earle, Walker Percy, G. B. McCormack, Rufus N. Rhodes, J. H. Barr. The following officers were elected by the directors: N. E. Barker, president; J. K. McDonald, vice-president; Paschal G. Shook, secretary and treasurer. The capital stock of the company is $490,000. Authority to issue $1,100,000 of bonds was given by the stockholders. The Tennessee Coal, Iron and Railroad Company will guarantee the bonds. The contract for the construction of the great plant has been given to the Wellman-Seaver Engineering Company of Cleveland, O. The issue of $1,100,000 bonds on the plant has practically been subscribed for, among the subscribers being the Louisville & Nashville Railroad Company for $200,000; the Southern Railway, for $200,000; James T. Woodward, $100,000; Moore and Schley, $100,000. Work on the mill will begin within 30 days, and men are now at work laying off the ground at Ensley City. The plant will include 12 open hearth furnaces, with a capacity of 50 tons per furnace per heat, and an adequate blooming mill capacity to break down to 4-in. billets a total of 1,000 tons of 18-in. ingots per day of 24 hours. The mill will be supplied with all modern improvements, including hydraulic stripping apparatus, so that the ingots can be drawn to the blooming mill without the usual labor of lifting them out of the pits. Electric cranes and overhead trolley systems will be employed so that the heaviest pieces might be handled with ease. The mill will be furnished with coke by the Semet-Solvay by-product coke oven plant also located at Ensley City, while a number of industries using steel will be established at Ensley City as soon as work on the big plant begins.

Buffalo. June 22.

(Special Report of Rogers, Brown & Co.)

The iron market in this district continues active to a degree unusual at this season of the year. The activity is perhaps more pronounced in the lines which come in touch with the agricutlural interests, but the volume of business in all lines appears heavy. In pig iron, it is preeminently a tremendous business at excessively low prices, which, however, are firm and show no tendency toward concessions. We quote below on the cash basis f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $11; No. 2 strong foundry coke iron, Lake Superior ore, $10.50; Ohio strong softener No. 1, $11; Ohio strong softener No. 2, $10.50; Jackson County softener No. 1, $14; Southern soft No. 1, $11.50; Southern soft No. 2, $11.25; Lake Superior charcoal, $11.50; coke malleable, $10.50.

Chicago. June 22.

(From our Special Correspondent.)

Pig Iron.—The pig iron market is rather quiet, with but few sales of any consequence. The Northern furnaces appear to be well out of the market at the present time, having orders enough on hand. The Southern furnaces are making a great bid for trade here, and in consequence, prices are suffering. The demand for the past two weeks has been wholly for small lots, footing up a fair tonnage each week. Prices are as follows: Lake Superior charcoal, $11.50@$13; local coke foundry, No. 1, $11.50@$12; No. 2, $11@$11.50; No. 3, $10.75@$11; local Scotch foundry, No. 1, $11.50@$12; No. 2, $11@$11.50; No. 3, $10.75@$11; Southern coke, No. 1, $10.35@$10.60; No. 2, $10.10@$10.35; No. 3, $9.75@$10; Southern, No. 1 soft, $10.35@$10.60; No. 2 soft, $10@$10.25; Southern silveries, $11.25@$11.50; Jackson County silveries, $12.50@$14.50; Alabama car wheel, $14@$16; Coke Bessemer, $11.50@$12.

Bar Iron.—The trade in bar has been in small quantities. Quotations are: Common iron, 1.05@1.10c.; guaranteed, 1.10@1.15c.

Steel Rails.—Small sales of both the heavy and lighter sections are the rule. Rails are quoted $20@$22.

Billets and Rods.—Sales of both billets and rods were small. The mills continue active on orders. Billets are quoted, $16@$16.50; rods, $22.25@$22.75.

Structural Material.—Business is quite good in small lots for railroad bridge work. A few new buildings in the city have taken 3,500 tons, and other buildings in sight will take as much more. Quotations are: Beams, 15-in. and under, 1.30@1.35c.; 18 to 24-in., 1.40@1.45c.; angles, 1.20@1.25c.; tees, 1.35@1.40c.; plates, 1.15@1.20c.

Cincinnati. June 22.

(From Our Special Correspondent.)

There has been a fair amount of sales of pig iron for this season. While the orders did not call for large quantities, there are some large orders on the market, but low prices are wanted. Southern iron prices are unsettled, and it will probably be well if at this time all can maintain a uniform price of $7 at furnace for No. 2 foundry till matters are more settled again. There is not much now doing in Southern car wheel iron. It is quiet in Northern iron, though some sales were made of Ohio Silvery irons and some of Lowmoor, Virginia, iron. Less is doing in Lake Superior coke, charcoal and malleable irons and very little in Southern charcoal iron.

With the uncertainty in Southern furnace prices and the fact that No. 2 can be had at $7 at furnaces, and other grades at proportionate lower prices, it was found best to change previous quotations here. We quote Southern coke No. 1, $9.75; No. 2, $9.25; No. 3, $9; No. 1 soft, $9.75; No. 2 soft, $9.50; Ohio Silvery No. 1, $12@$12.50; No. 2, $11.25@$11.50; Lake Superior coke No. 1, $11@$11.50; No. 2, $10.50@$11; Lake Superior car wheel and malleable, $14@$15; gray forge, $8.50; mottled coke, $8.50; standard Southern car wheel, $4.50@$15.25.

Cleveland. June 22.

(From Our Special Correspondent.)

Iron Ore.—More business has been done in ores during the past week than during the entire month preceding. The activity of the market was marked, and although the transactions did not aggregate as much as some of the weeks earlier in the season, the agents of the mining companies declare that they are more than satisfied with the business done and the prospects. Moderate lots of Bessemers, non-Bessemers and Mesabi Range product were sold, and the old ranges came in for their share of the business. Following are the prices: Specular and magnetic ores, Bessemer quality, $3.25 @$3.65; specular and magnetic ores, non-Bessemer quality, $2.50@$2.75; hematite ores, Bessemer quality, $2.55@$3.25; hematite ores, non-Bessemer quality, $2.10@$2.25.

The movement of ores continues fairly good, both from the upper lake region to Lake Erie ports and from the docks to the furnaces. The furnace men, in some instances, are so anxious for the ore that they have it loaded from the vessels directly into cars billed for their yards. The lake freight rates remain the same as have been quoted for a month past. Taken as a whole the past week has been a peculiar one; although it is in the middle of the season, many of the characteristics of the beginning of the season were apparent. In some respects the week compared with those at the close of the season when herculean efforts are made to get ore to the lower lake docks before navigation closes. Notwithstanding the present condition of affairs, lake freight rates have not fluctuated, and the smaller vessel owners are correspondingly discouraged.

Pig Iron.—Foundry iron was rather active during the past week, and a few good sales in other varieties were made. Bessemer iron is very quiet, not much movement being reported. Although the sales are not as large as they would like to see, the producers are loth to reduce prices, and therefore the market remains firm. The following are the current quotations: Lake Superior charcoal, $11.75; Bessemer, $10.75@$11; No. 1 foundry, $10.65@$10.75; No. 2, $10.25@$10.50; No. 1 Ohio Scotch, $10.75@$11; No. 2, $10.25@$10.50; gray forge, $9.50@$9.75.

Pittsburg. June 23.

(From Our Special Correspondent.)

The reports for the week are not what we would like to see, but still they might be worse; prices are very uncertain for most articles, and, besides, the time for closing down for repairs and stock-taking is close at hand. Dealers are not anxious for new deals, hence the reports, as a whole, are not encouraging, although not materially different from those for some weeks past. While the volume of business is about the same, the output has been greater than the orders, consequently producers are more anxious for orders and this leads to an apparently full market and easy, if not lower, prices. The situation is, in fact, entirely dependent upon circumstances and, while much may be said that is favorable, there are possibilities on the other side which suggest extreme conservatism in making predictions. The crop prospects are usually regarded at this season as being a pretty fair indication of what general business is likely to be during the coming year, and in this respect nothing could be more encouraging. With large crops, a good export demand and high prices two years in succession, many well-informed people think that the experience of 1879 will again be repeated. Of course, we are at war with a European country, and to what extent that will affect our position is as yet uncertain; in some respects it will add immensely to our business influence and prestige, but there will also come responsibilities which will require careful handling, and until these are disposed of it may prove to be a little premature to bank too heavily on large benefits from matters of this kind.

Steel Billets.—Little interest is shown in this department of the steel trade; consumers are not taking much new business, and as provision for Summer requirements was made some time ago, bids for new lots are not being made at prices likely to receive consideration.

Old Rails and Scrap Material.—Sales for several weeks have been liberal and prices well maintained.

Sheet Bars.—The demand was fair, with prices maintained. The principal inquiry was for prompt delivery.

Finished Material.—The situation shows no change; in some lines there is continued activity, while others are neglected.

Wire Nails.—Trade dull, prices unsatisfactory and nominal.

Latest.—The market is waiting; prices of Bessemer seem weaker. Pittsburg selling at $10.20@$10.40; Valley, $9.65@$9.75. Billets are unchanged as regard prices or demand. Mill iron is steady at $9.15@$9.25. For foundry iron demand is light; sales of No. 2 at $10; No. 3 at $9.75. Skelp steel declined 2½c. Skelp iron advanced 2½c. Steel wire rods steady at $19.50@$20. Old rails and scrap iron show liberal sales at fair prices.

COKE SMELTED LAKE AND NATIVE ORE.

Tons.	Cash.
5,000 B., J., A., V.	$9.75
3,000 B., J., P.	10.35
3,000 B., J., A., V.	9.75
3,000 B., J., A., P.	10 40
2,000 B., J., A., V.	9.75
2,000 B., J., A., V.	9.75
1,500 B., J., A., P.	10.40
1,000 Mill Ir., J., A., P.	9.25
1,000 B., J., J., V.	9.75
1,000 Mill, Ir., J., J., V.	8.75
501 Mill, Ir., P., P.	9.25
500 B., J., A., P.	10.25
500 M., Ir., J., P.	9.25
500 B., J., S., V.	9.75
100 B., Ir., P.	10.50
50 No. 2 Fdry, P.	10 00
50 No. 2 Fdy., P.	10 00
25 No. 3 Fdry, P.	9. 0

BLOOMS, BILLETS, SLABS.

3,000 Blts., P.	$15.20
2,000 Blts., P.	15.15
1,000 Blts., P.	15.38
1 000 Blts., P.	15.20
750 Blts., P.	15.15
500 Blts., P.	15.00
500 Blts., P.	15.00

SKELP IRON.

500 N. Gv'd, P.	$1.10 4 m.
400 Sheared, P.	1.25 4 m.
275 W. Gv'd, P.	1.7½ 4 m.
250 N. Gv'd, P.	1.17½ 4 m.

SKELP STEEL.

360 Sheared, P.	$1.10 4 m.
275 W. Gr'd., P.	97½ 4 m.
180 N. Gr'd., P.	97½ 4 m.

FERRO MANGANESE.

100 80% Imp., del., P.	$48.60
50 80% Imp., del., P.	49.00

SHEET BARS.

Tons.	Cash.
2,000 Delivered, P.	$17.50
1,000 Delivered, P.	17.25
800 Delivered, P.	17.60

STEEL WIRE RODS.

3 000 P't. S., M.M., P.	$19.50
1,000 Delivered, P.	20.00

BLOOMS, BILLETS, BAR ENDS.

1,000 Bilt ends, P	$9.85

SPELTER.

50 Prime West., P	$5.15

MUCK BARS.

500 Neutral, P.	18.25

OLD RAILS.

1,500 Iron Rails, gr., V.	$13.50
1,200 Steel Rails, gr., P.	10.30
800 Iron Rails gr., P	13 60
300 Steel Rails, gr., P.	10.50
100 S. S. Rails, gr., P.	11.00

SCRAP MATERIAL.

750 H'y mel'g scrap, gross, P.	$9.50
700 Bushel'ng scrap, net, P.	9.25
600 No. 1 W't scrap, net, V.	11.00
500 Cast scrap, gr., P.	9.00
500 H'y mel'g. stock, gr., P.	10.50
400 Cast b'gs, n, V.	5.75
300 W't t'ns, net, V.	6.50
200 Old car wheels, gross, P.	10.00
200 W't. sc'p., net, V.	11.00
100 H'y mel'g. stock, gross, P.	10.50

CHARCOAL.

100 No. 2 F'd'y., P.	15.00
40 No. 2 F'dy., P.	14.00
25 White C., Ex., P.	20.00

Philadelphia. June 21.

(From our Special Correspondent.)

Pig Iron.—Prices have dropped. Strange to say, there is no rush for stuff. Two or three causes have operated to produce this result, one of them being the determination of Southern pig iron makers to work off a great deal of iron on this and the New England market. Some few concerns refuse to drop, and of course are making no efforts to sell. Buyers are not placing orders, as they should under the circumstances, and consider that they know their own business. Forge iron continues very dull; Standard brands go a-begging at $10, though a few could be mentioned that cannot be bought at that price. Ordinary brands are $9.50, and some sales of two or three large lots have been made for summer delivery. Other buyers are considering. Quotations are: No. 1 X foundry, $11.00@$11.25; No. 2, $10.50@$10.75; No. 2, plain, $10@$10.25.

Billets.—Despite the positive assurances given that billets would not go any lower, they were offered on Monday at $16.75, and a lower offer is mentioned as having been made.

Merchant Bars.—A drop is noted in steel bars. It led to a good deal of business at two or three mills. Other mills have not yet followed, but probably will be obliged to. Bar iron of fair quality is selling at 1c.; refined is quoted at 1.10c. There is considerable canvassing going on with a view of securing business at once.

Sheet.—A shading in common sheet iron in certain instances has resulted in the placing of large orders for summer and fall delivery. Current requirements this week were a trifle larger.

Pipes and Tubes.—The activity in Western markets for merchant pipe has helped to close business here since Monday, and has served to start negotiations on new business. The mills manage to keep up the same production. Tubes are strong, and the opening up of machine shop and boiler works is giving the tube makers a chance to bid on some good-sized contracts.

Merchant Steel.—No large orders have been booked for merchant steel, but there is an enlarging consumption in the East, which will be represented in a larger demand. The activity in Western factories is reflected here.

Plates.—After two or three months of rather remarkable activity the plate manufacturers have enjoyed a week of quiet. Prices, however, are very firm. Ordinary plates are 1.20c.; universals, 1.25c.; flange, 1.35c.; fire box, 1.60c. up to 2.40c. The locomotive builders are good customers.

Structural Material.—The representatives report to-day a moderation in orders. Railroad bridge builders have been consulted regarding their probable requirements for the incoming half-year, and it appears that a few companies contemplate extensive renewals and repairs. The amount of new bridge work is rather limited at present, but it is understood that a continuation of favorable traffic conditions may encourage the managements to push bridge building needs that have been pigeon-holed a long time. Angles are 1.20c.; beams and channels, 1.30c.

Steel Rails.—Orders for the week, big and little, foot up some 20,000 tons, of which one-half were taken by one company at $17.50 at mill.

Old Rails.—Old iron rails are quoted at $12@$12.50 and dull. Old steel rails are $10.50; no sales reported.

Scrap.—The scrap market is dull and there is no change in prices. Choice railroad is $12@$12.50; old car wheels, $10.50; old iron axles, $15; machinery cast, $9.50; No. 1 yard scrap, $10.50; cast borings, $7.

METAL MARKET.

NEW YORK, June 24, 1898.

Gold and Silver.

Gold and Silver Exports and Imports

At all United States ports, May, 1898, and years from January 1st, 1898 and 1897:

	Coin and Bullion.		In ores.		Total excess, Exp. or imp.
	Exports.	Imports.	Exports.	Imports.	
GOLD					
May.	$109,157	$13,119,383	.....	$199,517	I. $13,209,743
1898..	5,673,031	87,059,977	$72,441	2,493,204	I. 83,807,709
1897..	17,377,326	3,066,605	93,068	1,788,903	E. 12,614,886
SILV.					
May.	4,184,432	488,568	.....	1,080,881	E. 2,614,983
1898..	20,236,278	2,402,361	112,699	8,047,223	E. 9,899,393
1897..	22,808,037	3,465,067	259,150	8,550,708	E. 11,051,412

This statement includes the exports and imports at all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending June 24th, 1898, and for years from January 1st, 1898, 1897, 1896, 1895.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$37,465	3,417	$642,276	$10,161	E. $666,160
1898..	4,491,104	68,957,181	16,167,403	1,766,108	I. 50,063,782
1897..	14,147,961	1,800,307	19,745,175	1,289,883	E. 30,802,946
1896..	30,549,427	17,119,538	18,159,946	1,110,499	E. 30,479,346
1895..	32,546,347	21,026,452	16,896,205	821,921	E. 27,594,179

Gold exports and imports were all in small lots. The silver exported went chiefly to London; that imported came from South America.

The United States Assay Office in New York reports the total receipts of silver at 125,000 oz. for the week.

Financial Notes of the Week.

The general condition of business shows little change. The volume of trade is large, but operations are generally on conservative lines. The collapse of the Chicago wheat speculation has had very little effect outside of a limited circle. The evidences are that the farmers have generally taken advantage of the high prices to clear out their stocks. This year's crops promise very well, though it is not probable that the coming year will show quite so strong a foreign demand for our grain as has existed for some time past. Nevertheless, the position of the farmers is strong, as a rule, and trade promises well. The bank statements all over the country show a large increase in deposits and a good supply of money.

Money in New York continues to be in abundant supply and rates are unchanged. The subscriptions to the new Government loan have been very large, but the total is not yet known, as the Treasury Department has not summed up the totals, and, indeed, has not yet received all the returns. While offered as a popular loan, subscriptions being received only for limited amounts, there is no doubt that a considerable part of the issue will find its way into the possession of the banks and other institutions. The arrangements for the loan may have a temporary effect on the money market; but Government disbursements are large and there is not likely to be any considerable increase in rates on loans.

The silver market, after a lapse to 26¾d., has again shown firmness, and under the influence of quiet buying, has advanced to 27¼d., without any special feature.

The statement of the United States Treasury on Thursday, June 23d, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	June 16.	June 23.	Changes.
Gold	$165,978,356	$165,673,480	D. $304,876
Silver	7,516,773	9,894,833	I. 2,378,060
Legal tenders	29,620,307	28,557,404	D. 1,062,903
Treas. notes, &c.	1,798,455	2,043,620	I. 245,165
Totals	$204,913,891	$206,169,337	I. $1,255,446

Treasury deposits with national banks amounted to $28,469,427, a decrease of $175,864 during this week.

The statement of the New York banks—in-

cluding the 66 banks represented in the Clearing House—for the week ending June 18, gives the following totals, comparisons being made with the corresponding weeks in 1897 and 1896:

	1896.	1897.	1898.
Loans and discounts	$474,783,600	$518,550,800	$610,336,500
Deposits	495,329,800	592,528,200	730,976,400
Circulation	14,607,600	13,992,700	14,686,700
Reserve:			
Specie	61,554,600	90,050,200	182,906,500
Legal tenders	82,196,100	106,472,800	59,111,400
Total reserve	$143,750,700	$196,523,000	$242,016,900
Legal requirement	123,842,450	148,132,050	182,744,100
Balance surplus	$19,908,250	$48,390,950	$59,272,800

Changes for the week this year were increases of $6,765,600 in deposits, $3,723,200 in specie, $3,399,900 in legal tenders, and $5,431,700 in surplus reserve; decreases of $426,000 in loans and $32,600 in circulation.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	1897.		1898.	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Assoc.	$90,050,200	.....	$182,905,500	.....
England	183,020,045	.....	192,450,665	.....
France	401,227,269	$246,570,289	376,182,700	$247,490,600
Germany	233,855,000	.....	213,200,000	.....
Austro-Hun.	176,690,000	63,285,000	174,170,000	62,905,000
Spain	44,165,000	56,805,000	49,170,000	21,140,000
Belgium	20,520,000	.....	21,775,000	.....
Netherlands.	13,150,000	35,010,000	14,300,000	34,825,000
Italy	75,140,000	10,690,000	75,500,000	9,605,000
Russia	460,985,000	20,575,000	553,475,000	21,820,000

The returns for the Associated Banks of New York are of date of June 18th, the Banks of England and France, June 23rd, and the others are of date of June 17th, as reported by the "Commercial and Financial Chronicle's" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

Shipments of silver from London to the East for the year up to June 9th are reported by Messrs. Pixley & Abell's circular as below:

	1897.	1898.	Changes.
India	£2,318,950	£2,768,940	I. £449,990
China	67,627	310,956	I. 243,329
The Straits	90,305	101,062	I. 10,757
Totals	£2,476,882	£3,180,958	I. £704,076

Arrivals for the week this year were £234,000 in bar silver from New York and £31,000 from the West Indies; a total of £255,000. Shipments were £26,800 in bar silver to Bombay and £25,790 to Hong Kong, and £4,600 in Mexican dollars to Penang, a total of £57,190.

In 1895 the Bombay Mint began the coinage of what were known as British trade dollars; silver dollars of the value of the Mexican dollar, intended for circulation in China and other far Eastern countries. The coinage, by a recent report, has been as follows: Fiscal year ending April 30th, 1896, $3,524,900; 1897, $6,189,170; 1898, $24,138,171; total, $33,852,241. These dollars go chiefly to Hong Kong.

Prices of Metals in New York.

June.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. P nce	Copper. Lake, cts. P. lb.	Copper. Electrolytic, cts. P. lb.	Copper. Lond' standard £ P. ton.	Tin, cts. P. lb.	Lead, cts. P. lb.	Spelter, cts. P. lb.
18	4.85⅛	57⅞	26 11/16	.....	.....	.....	.....	.....	.....
20	4.85⅛	58¾	27⅛	11¾	11.45	49 12 6	15 25	3.90	5¼
21	4.85⅛	58¾	27⅛	11¾	11.45	49 12 6	15 25	3.90	5¼
22	4.85¼	58¾	27⅛	11¾	11.40	49 15 0	15 30	3.92½	5¼
23	4.85¼	58⅞	27⅛	11¾	11.40	49 12 6	15 25	3.92½	5¼
24	4.85¼	59⅛	27¼	11¾	11.40	49 12 6	15 30	3 92½	5¼

Average Prices of Silver per oz. Troy.

Month.	1898. Lond'n Pence.	1898. N. Y. Cents.	1897. Lond'n Pence.	1897. N. Y. Cents.	1896. Lond'n Pence.	1896. N. Y. Cents.
January	26.29	56.77	29.74	64.79	30.69	67.13
February	25.89	56.07	29.68	64.67	31.01	67.67
March	25.47	54.90	28.96	63 06	31.34	68.40
April	25 95	56.02	28.36	61.85	31.10	67.92
May	26 31	56.98	27.86	60.42	31.08	67.88
June	.....	.....	27.58	60.10	31.46	68.69
July	.....	.....	27.36	59.61	31.45	68 75
August	.....	.....	24.93	54.19	30 93	67.34
September	.....	.....	25.66	55.24	30.19	65.68
October	.....	.....	26.77	57.57	29.68	65.05
November	.....	.....	26 87	57.93	29.46	64.98
December	.....	.....	26.83	58.01	29.70	65.24
Year	.....	.....	27 55	59.79	30.67	67.06

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	Copper. 1898.	Copper. 1897.	Tin. 1898.	Tin. 1897.	Lead. 1898.	Lead. 1897.	Spelter. 1898.	Spelter. 1897.
Jan	10.99	11.75	13.87	13.44	3 65	3.04	3.96	3.91
Feb	11.28	11.92	14 08	13.59	3.71	3 28	4.04	4.02
March	11.98	11.80	14.38	13.43	3.72	3 41	4.25	4.12
April	12.14	11.48	14.60	13.34	3.63	3 32	4.26	4.13
May	12.00	11.03	14.52	13.44	3.64	3.26	4.27	4.21
June	11.89	11 11	15.22	13.77	3.82	3.33	4.77	4.24
July	.....	11.11	.....	13.89	.....	3.72	.....	4.32
August	.....	11.16	.....	13.80	.....	3.84	.....	4.26
Sept	.....	11.30	.....	13.98	.....	4.30	.....	4.18
October	.....	11.13	.....	13.88	.....	4 00	.....	4.17
Nov	.....	10.88	.....	13.79	.....	3.76	.....	4.03
Dec	.....	10.78	.....	13.71	.....	3.70	.....	3 89
Year	.....	11.29	.....	13.67	.....	3.58	.....	4.12

Prices of Foreign Coins.

	Bid.	Asked.
Mexican dollars	$ .45¼	$ .46½
Peruvian soles and Chilean pesos	.42	.43
Victoria sovereigns	4.86	4.88
Twenty francs	3.85	3.88
Twenty marks	4.75	4 78
Spanish 25 pesetas	4.78	4.80

Other Metals.

Copper.—The decline of which we spoke in our last few reports has made further progress without much business having been done. Manufacturers and consumers are looking on; several of the producers have become impatient and have been pressing on the market, in consequence of which rather lower prices have again been established. Lake copper has been selling at 11.75c., and there are persistent rumors that it can be had below these figures. The largest cut was in electrolytic copper, of which sales took place at 11.37½@11.50c. for cakes, wire bars or ingots, and 11.15@11.25c. for cathodes. Casting copper is nominal at 11.25c. Copper and brass manufacturers are quite busy, but new orders do not come in as fast as they would like to see, and in consequence thereof they are not in a hurry to contract for raw material. It was expected that the lower prices would bring orders from Europe, but so far that has not been the case to any material extent.

The London market has been very flat, and the market for g. m. b.'s opened nearly 10s. below the closing quotations of last week, £49 12s. 6d.@£49 15s., which figure, with only slight variations up and down, ruled throughout the week, the closing prices being £49 12s. 6d.@£49 15s. for spot, and £50@£50 2s. 6d. for three months prompt. The difference between spot and g. m. b. copper has now again become a normal one, showing that the premium which existed for spot has disappeared. Rather more business is reported as having taken place abroad in fine copper, European producers having somewhat more freely met the decline, but it cannot be said that the business has assumed very large proportions. We quote: English tough, £52 10s.@£53; best selected, £53@£53 10s.; strong sheets, £60 10s.; India sheets, £57 10s.@£58; yellow metal, 5d.

Imports of copper into Great Britain for the month ending May 31st were, in long tons: 19,887 tons ore (against 14,377 tons in 1897); 34,519 tons of regulus and precipitate (40,282 tons in 1897); 26,841 tons fine copper (24,174 tons in 1897). Of the imports this year the United States sent 525 tons fine ore; 6,326 tons matte, or regulus, and 15,364 tons fine copper.

Tin.—The demand has for the moment fallen off somewhat, but prices remain firm, the more so as nothing cheap can be purchased in the foreign markets. We quote for both spot and futures, 15¼@15⅜c. Advices from London as well as from the East continue rather bullish, and the improvement in the statistics reported to us from time to time during the last nine months continues and is likely to go on for some time.

In London values again show an improvement, the market closing very firm at £69 7s. 6d.@£69 10s. spot, and £69 15s.@£69 17s. 6d. three months prompt.

Exports of tin from the Straits Settlements for the four months ending April 30th were, in long tons:

	1896.	1897.	1898.
United States	5,672	4,989	7,687
Europe	9,002	9,006	7,990
India and China	2,038	853	954
Totals	16,712	14,848	16,631

The exports this year were 1,783 tone more than in 1897, but 81 tons less than in 1896.

Lead.—There has been a good, steady demand from consumers, and still more from speculators, during the week, and transactions would have been larger if more material had been offered by refiners. Consumption of late appears to have improved considerably, and the market closes very firm at 3.92½c. New York, and 3.80 @3.82½c. St. Louis.

The foreign market has been very weak and another heavy drop took place, Spanish lead having declined to £13@£13 2s. 6d., with English lead 5s. more.

Imports of lead into Great Britain for the five months ending May 31st were 77,220 tons, an increase of 7,897 tons over last year. Of the imports this year 13,192 tons were from the United States.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: The market is strong and higher; the nominal value of lead is 3.82½@3.85c., according to brand and delivery.

Spelter.—The market continues extremely irregular, with spelter for immediate shipment still commanding quite a heavy premium. The galvanizing business continues very satisfactory, and spelter for next month's delivery is also in good demand. Considering the great irregularity in the market, only nominal quotations can be given at 5@5¼c. New York, and 4¾@5c. St. Louis, while for July business has been done at 4⅝@4¾c. New York, and 4½@4⅝c. St. Louis.

The English market continues strong, good ordinaries being quoted £19 18s. 9d., with specials 2s. 6d. more.

Imports of zinc in Great Britain for the five month ending May 31st were 33,369 long tons, an increase of 4,646 tons over last year.

Antimony has been in good demand at firm prices, 9¾c. for Cookson's and 9@9¼c. for Hallett's, Japanese and U. S. Star.

Nickel.—Business continues on unchanged lines, and no alteration in prices can be reported. We quote for ton lots 33½@36c. per lb., and for smaller orders 35½@38c. London prices are 14@16d. per lb., according to size of order.

Platinum.—Demand is steady. The metal can be had in large lots at $14.40; for smaller orders it is quoted at $15@$16 per oz. in New York. The

Imports and Exports of Metals.

Port.	Week, June 16. Expts	Impts.	Year, 1898. Expts.	Impts
*New York.				
Aluminum, boxes	.....	.....	181	.....
Antimony ore...short tons	.....	13	.....	194
" regulus..casks	.....	.....	.....	759
Brass, old.....short tons	.....	.....	91	.....
Chrome ore.....long tons	.....	.....	.....	47
Copper, fine..... " "	$1,600	.....	28,281	2,188
" ore..... " "	.....	.....	.....	.....
" matte..... " "	$124	.....	3,813	392
" sulphate " "	.....	.....	1,101	.....
" wire..... " "	.....	.....	2,365	.....
Ferro-chrome.. " "	.....	15	.....	236
Ferro-mangan'se " "	.....	.....	1,073	82
Ferro-silicon..... " "	.....	.....	1,142	4
Iron ore ..... " "	.....	.....	.....	157
" old..... " "	.....	.....	1,406	.....
" pipe..... " "	.....	.....	2,517	.....
" pig, bar, rod " "	323	263	5,409	7,020
" castings..... " "	.....	.....	3	.....
Lead, antimonial " "	.....	.....	.....	.....
" bullion..... " "	$1,952	.....	26,669	47,601
" ore..... " "	.....	.....	.....	506
Manganese ore.. " "	.....	.....	.....	4,484
Nails..... " "	.....	.....	966	29
Nickel " "	40	.....	1,101	40
Rails, old " "	.....	.....	1,607	.....
Spiegeleisen..... " "	.....	.....	.....	2,354
Steel billets, rods " "	.....	308	4,300	8,336
Tin ..... " "	.....	$125	3 206	10,915
" dross..... " "	10	.....	73	.....
" and black plates, boxes	.....	10,038	.....	598,964
Wire.....bundles	.....	.....	127	.....
Zinc.....long tons	.....	.....	7,862	200
" dross..... " "	45	.....	1,085	132
" ores.....	.....	.....	3,359	.....
†§Baltimore.				
Aluminum.....lbs.	.....	.....	21,875	.....
Antimony regulus..casks	.....	71	.....	120
Brass scrap.....long tons	.....	.....	.....	.....
Chrome ore..... " "	.....	.....	25	2,400
Copper, fine..... " "	622	.....	18,559	.....
" matte... " "	.....	.....	.....	.....
" sulphate " "	70	.....	1,521	.....
Ferro-manganese " "	20	375	535	1,928
Ferro-silicon..... " "	.....	.....	.....	150
Iron ore..... " "	.....	.....	.....	139,087
" pig, bar, etc. " "	.....	.....	917	1,091
" pipe..... " "	140	.....	3,770	.....
Lead..... " "	.....	.....	61	.....
Manganese ore.. " "	.....	.....	512	12,513
Nails..... " "	.....	.....	42	.....
Rails..... " "	.....	.....	7,753	.....
Silicon..... " "	.....	.....	10	.....
Spiegeleisen..... " "	.....	75	.....	1,348
Steel..... " "	711	5	8,073	5,387
" wire.....bundles	.....	.....	2 700	2,671
Tin.....long tons	.....	.....	.....	1,000
" dross..... " "	.....	.....	65	.....
" and black plates, boxes	.....	.....	1,109	8,007
Wire.....bundles	1,240	.....	9 809	2,280
Zinc.....long tons	.....	.....	.....	.....
" dross..... " "	12	.....	183	.....
*Philadelphia.				
Antimony.....casks	.....	.....	.....	217
Chrome ore.....long tons	.....	.....	.....	21,282
Copper ore..... " "	.....	.....	.....	108
Ferro-manganese " "	.....	.....	.....	333
Iron ore..... " "	.....	.....	.....	28,202
" pig..... " "	.....	.....	200	200
" pyrites..... " "	.....	.....	.....	.....
Manganese ore.. " "	.....	5,944	.....	22,214
Spiegeleisen..... " "	.....	.....	.....	403
Steel..... " "	.....	.....	2,540	.....
Tin..... " "	.....	.....	.....	165
" and black plates, boxes	.....	3,177	.....	29,988

*New York Metal Exchange returns. †From our Special Correspondent. §Week ending June 23.

London quotation is 58@60s. per oz. Prices are firm.

For chemical ware (crucibles and dishes) best hammered metal Messrs. Eimer & Amend, New York, furnish the following prices: In lots of 250 grams or more, 56c. per gram; in lots of 100 grams or more, 57c. per gram; less than 100 grams, 58c. per gram; unmanufactured platinum will be supplied in same quantities at 2c. less per gram.

Quicksilver.—There has been no change in the quotation this week, and it is still $43 per flask, New York. The London price is unchanged at £7 12s. 6d. per flask, with the same figure named from second hands.

Receipts of quicksilver at San Francisco in May were 1,856 flasks; for the five months ending May 31st they were 9,472 flasks, against 5,960 last year and 15,339 in 1896. An unusually large quantity was shipped direct from the mines. Exports in May were 973 flasks; for the five months they were: New Zealand, 20; British Columbia, 82; Central America, 606; Mexico, 2,553; total, 3,261 flasks, against 2,242 flasks last year. Shipments overland by rail for the four months ending April 30th. this year, were 2,288 flasks.

Imports of quicksilver into Great Britain for the five months ending May 31st were 2,899,066 lbs., a decrease of 6,078 lbs. Exports for the period were 926,446 lbs., an increase of 115,216 lbs. over last year.

The Minor Metals.—Quotations are given below for New York delivery:

Aluminum.	Per lb.		Per lb.
No. 1, 98% ingots	33@40c.	Bismuth	$1.30@$1.80
No. 2, 90% ingots	31@34c.	Phosphorus	40@50c.
Rolled sheets	38c. up	Tungsten	70c.
Nickel alloy	33@39c.	Ferro-tungsten, 60%	60c.

Variations in price depend chiefly on the size of the order.

CHEMICALS AND MINERALS.

(For current prices of chemicals, minerals and rare elements see also page 784.)

New York. June 24.

Heavy Chemicals.—This market is quiet, new business having become scarcer. Occasionally we hear of shaded prices among domestic makers, while reports come from abroad that export demand is diminishing. The new American works are progressing, and the North American Chemical Company (United Alkali Company) in Michigan is making preparations for active work. The Niagara Falls works making chlorate of potash are in steady operation now. Our imports from Great Britain are gradually diminishing. In May the exports of alkali to America were 67,855 cwts., against 230,597 cwts. in May, 1897. The exports of alkali from the United Kingdom to all countries in May amounted to 321,355 cwts., against 501,695 cwts. in 1897, and of bleaching materials to 91,074 cwts., against 91,246 cwts., last year. Imports into New York from June 18th to 23d, inclusive, included 75 drums caustic soda, 33 bbls., 50 kegs, 62 casks and 720 bags soda ash, 405 casks and 20 bbls. English and 118 bbls. Belgian bleaching powder, 100 kegs chlorate of potash and 40 bags and 20 kegs bicarb. soda. Receipts of domestic goods at this port for the same period included 69 bbls. and 85 pkgs. potash and 920 pkgs., 80 sacks and 43 bbls. soda ash. There were exported to Sydney, Australia, on June 23d 2,000 cases of bicarb. soda, valued at $1,386. Concerning the tares on certain heavy goods, the Drug Trade Section of the New York Board of Trade and Transportation recently met and carefully prepared the following list as a guide in all trade transactions: Bleaching powder, invoice tare; chlorate of potash, actual net weight; soda ash, invoice tare; bicarb. soda, actual weight; carb. soda ash, invoice tare; sal soda, invoice tare.

Quotations are: Caustic soda, domestic high test, $1.50@$1.55 per 100 lbs. f. o. b. works; foreign, $1.65@$1.80 delivered, according to test and quality. Powdered caustic soda, 2⅞@3⅛c. per lb., according to make and test; alkali domestic, 58%, basis 48%, 55@60c. for bags; foreign, 55@60c. from dock, as to style of package. Bleaching powder, English prime brands, $1.65 @$1.75 per 100 lbs.; other brands, $1.40@$1.50. Bicarb. soda, domestic, ordinary, $1.25@$1.50 per 100 lbs. f. o. b. works, less the usual discounts; foreign, $2.12½@$2.25 per 100 lbs., according to brand and style of package. Sal soda, domestic, 50@55c. per 100 lbs. f. o. b. works, less the usual discounts; English, 62½c. to arrive, and 65@67½c. per 100 lbs. for spot. Concentrated sal soda, foreign (crystal carbonate), $1.60@ $1.65 per 100 lbs.; domestic (monohydrate crystals), $1.25@$1.30 per 100 lbs. Chlorate of potash, powdered, 8¾@9c.; crystals, 9@9½c.

Acids.—Large orders are scarce. It is reported that the Arizona Copper Company is in a position to sell sulphuric acid, copperas and bluestone, made at its works at Clifton, Ariz., at low prices, these being by-products which cannot be utilized by the company itself; but the freight charges from Arizona are high. Imports this week included 25 casks of oxalic acid from Swansea. The Drug Trade Section of the New York Board of Trade and Transportation has recently agreed to the following customary tares: On acetic acid, actual weights; oxalic, invoice tare; blue vitriol, actual weights. Quotations are, per 100 lbs. for New York and vicinity, as follows: Acetic acid, commercial, No. 8, $1.40@ $1.55; redistilled, 2%, $2@$2.15. Muriatic acid, 18° $1.10@$1.75; 20°, $1.20@$1.87½; 22°, $1.35@$2.25, according to quantity and brand. Nitric acid, 36°, $3.50@$4.75; 38°, $3.75@$4.62½; 40°, $4.00@$4.87½, 42°, $4.62½@$5.25. Oxalic acid, $6.50@$6.75. Mixed acids, according to mixture. Sulphuric acid, 66°, $1.10 for drums and $1.15@$1.75 for carboys. Chamber acid, 50°, in jobbing way, $11.50@$12 per ton f. o. b. factory. Blue vitriol, $3.50@$3.62½ for extra grades, and $3.37½ for ordinary.

Brimstone.—Spot goods are scarce, and demand is also small. Shipments to this port are the 'Robinia," "Ravensbough" and "Maylantp." The "Glaxinia," with about 2,000 tons, is due. Exports to Montreal are still being made, and we understand that the "Brumhorr," with 3,000 tons, and "Tiverton," with about 4,000 tons, are unloading, and the "Lorlie," with about 4,000 tons, is expected this week. The Italian ambassador is informed that no sulphur cargoes from Sicily will be interfered with without proper notification. The insurance companies are charging a war risk of 2½ per cent. on all cargoes coming forward. Stocks of sulphur in Sicily are one-third less than a year ago, principally on account of heavy shipments to America. Charters noted this week are British steamers with sulphur ore from Huelva, Spain; 1,307 tons to Charleston at 12s., and 1,220 tons to Port Royal at 12s. 3d; 1,536 and 1,691 tons to port north of Hatteras, 10s. 6d., July; 2,400 tons to Newport News, 11s.; British steamer, 1,228 tons, from Sicily to port north of Hatteras at 9s. 6d. We note that 5 cases of sulphur were recently imported from London. Quotations for best unmixed seconds on spot are nominally $25@$26; shipments, $23.50@$24, and thirds $21@$21.50 per ton. Refined sulphur is reported sold at 3@3⅛c. per lb. net for flowers, 2¾c. net for flour, and 2½c. net for roll. Liberal discounts, we understand, are being allowed from list prices as recently issued.

Nitrate of Soda.—Market is inactive, and prices continue to fall. Since June 10th arrivals have been: "Stuart," with 10,000 bags; "Hartfield," 21,000 bags, and "Coya," 20,364 bags, and within the next three weeks 47,000 bags more will come to hand in three cargoes. Stocks at New York are estimated to be between 27,000 and 30,000 bags. Quotations are: Spot and July, $1.70 @$1.72½ per 100 lbs.; August, $1.67½@$1.70; September-December, inclusive, $1.65@$1.67½. It has been reported that as low as $1.60 has been quoted on late shipments. Concerning European nitrate statistics for May, Henry Bath & Son report as follows: Imports, 85,160 tons, against 89,160 tons in 1897; deliveries, 87,270 tons, against 78,230 tons; deliveries first 5 months, 730,200 tons, against 641,220 tons, and for 12 months to May 31st, 1,068,360 tons, against 955,080 tons; stock, May 31st, 46,270 tons, against 139,310 tons; afloat, May 31st, 177,520 tons, against 170,550 tons; visible supply, 223,790 tons, against 309,860 tons. There is more or less talk on the other side regarding the revival of the nitrate convention, but it does not look as though a new agreement will be made for some time yet.

Fertilizing Chemicals.—Business has been rather quiet. The leading ammoniates are fairly firm, while the animal goods are offered sparingly by Western packers. The catch of fish this season has been rather light. It is reported from Cleveland, O., that the most important concerns engaged in the Lake fishing have finally consolidated after two years' negotiation. The State Commissioner of Agriculture announces that the sales of fertilizers in North Carolina from January 1st to June 1st, 1898, have been 214,332 tons, against 194,877 tons in 1897, and 173,595 tons in 1895. We note that a schooner of 402 tons has been chartered to take fish scrap from Linekin Bay to Charleston at $1.25. Imports this week included 250 bags sulphate of potash, 400 tons manure salt, 180 tons kainit, and 4,090 bags English manure.

Quotations are: Sulphate of ammonia, gas liquor, $2.45@$2.50 (basis of 25%); bone, $2.40@ $2.45 per 100 lbs. Dried blood, high grade, Western, $1.87½@$1.90 per unit; New York, $1.82½@ $1.85 per unit. Azotine, $1.70@$1.75, basis New York Concentrated phosphates (30% available phosphoric acid), 57½c. per unit. Acid phosphates, 13@15%, av. P_2O_5, 55@60c. per unit at sellers' works in bulk. Dissolved bone black, 17@18%, P_2O_5, $16@$16.50 per ton. Acidulated fish scrap, $11, and dried scrap, $21@$22 f. o. b. fish factory. Ammonia super-phosphates, high grade, $25@$26 per ton. Tankage, high grade, $16.25@$16.75 per ton f. o. b. Chicago, $19½@$20½ at New York; concentrated tankage, $1.50 per unit, f. o. b. Chicago; low grade, $13@$13.50. Bone tankage, $19.50@$20.50; ground bone, $24@$24.50, delivered. Bone meal, $1.40@ $1.50, f. o. b. Chicago.

Phosphates.—Export business has been favored by lower freight rates, but charters have not been so plentiful this week. Among those taken we note: British steamer, 1,220 tons, from Port Royal to United Kingdom, 15s. 6d., July, another of 1,507 tons from Brunswick to Zwyndrecht, 17s. 6d., July; another of 1,390 tons from Charlotte Harbor to the United Kingdom, excluding Berwick, Ipswich and Lynn, 18s. 9d., July; another of 1,843 tons from Fernandina to Stettin, 18s. 6d.; schooner, 552 tons, from Charleston to Philadelphia, $1.80, and one of 999 tons from Pensacola to Carteret, N. C., at private terms. Shipments of phosphate from Punta Gorda in April and May by the Peace River Phosphate Mining Company were 7,227 tons, making a total thus far in 1898 of 17,095 tons. From Fernandina the shipments in May aggregated 24,517 tons; total for five months, 72,163 tons, and estimated shipments in June, 25,000 tons.

Quotations on Florida high grade, 75% to 80% rock, sold on guarantee of 77% iron and less than 3% alumina, are $7@$7.25 per long ton, f. o. b. Fernandina. The freight rate to New York is about $1.90 per ton. Florida land pebble is quoted at 7¾@8c. per unit, delivered in New York, exclusive of war risk insurance. South Carolina ground rock is worth $5.50 to $5.75 per short ton, delivered in New York; undried, $3 per 2,240 lbs., f. o. b. Ashley River; dried, $3.25 to $3.45 f. o. b. same place. Tennessee phosphates, $1.45@$1.55 f. o. b. Mt. Pleasant.

Charleston, S. C. June 18.

(From our Special Correspondent.)

The phosphate miners are trying to keep pretty stiff on the price of $3.25 for high grade land rock, and $2.40@$2.60 per ton for river rock, but the May shipments were light, as follows: Crude, 8,172 long tons, against 10,774 tons in 1897, and 11,728 tons in 1896.

Liverpool. June 15.

(From our Special Correspondent.)

The market for heavy chemicals continues in a lethargic condition as regard export business. Soda ash is firm in price, but inactive. We quote spot range for tierces, as to market, as follows: Leblanc ash, 48%, £4 10s.@£4 15s. per ton; 58%, £4 17s. 6d.@£5 per iton, net cash. Ammonia ash, 48%, £4@£4 5s. per ton; 58%, £4 5s. @£4 10s. per ton, net cash. Bags are 5s. per ton under price for tierces. Soda crystals are in demand and steady at £2 17s. 6d@£3 per ton, less 5% for barrels, with an allowance of 7s. per ton if taken in bags. Caustic soda is dull and slow of sale. Spot range as to market may be called about as follows: 60%, £6 3s. 9d.@£6 5s.; 70%, £7 3s. 9d.@£7 5s.; 74%, £7 16s. 3d.@£7 17s. 6d.; 76%, £8@£8 5s. per ton, net cash. Bleaching powder is firmer for softwood, owing to rather better demand for home trade, but export orders are scarce and hardwood quotations are nominal at about £5 15s.@£5 17s. 6d. per ton, net cash, as to destination. Chlorate of potash is neglected, and is offered at from 3 3-16d.@3¼d. per lb. Bicarb. soda is selling to a fair extent at £5 15s.@£6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages, as to export market. Sulphate of ammonia is quiet, at about £9 6s. 3d.@ £9 8s. 9d. per ton, for good gray 24&25% in double bags f. o. b. here. Nitrate of soda is in light demand, but spot supplies being limited, holders quote £7 17s. 6d.@£8 per ton, less 2½% for double bags f. o. b. here, but slight concessions would be accepted by sellers for July delivery. Carb. ammonia, lump, 2¾d.@2⅞d. per lb.; powdered, 3d.@3⅛d., less 2½%.

MINING STOCKS.

Complete quotations will be found on pages 780, 781 and 782 of mining stocks listed and dealt in at:

Baltimore.	New York.	Mexico.
Boston.	Philadelphia.	Paris.
Cleveland.	Pittsburg.	Rossland.
Colo. Springs.	Salt Lake.	Shanghai.
Denver.	San Francisco.	Toronto.
Helena.	London.	Valparaiso.

New York. June 24.

Mining shares are dull and prices continue low generally. The war tax of 2 cents on every $100 par value of any stock sold may discourage speculation. The New York Stock Exchange recently passed resolutions that customers shall pay the tax on stock, and any broker who shares this payment will be held responsible. Another tax is the $50 imposed upon every broker, whether he be a member of an exchange or not. With a declining business it is fair to assume that the mining brokers, both in the East and West, will find the payment of this tax rather hard. Both these taxes will be put in force by the Government on and after July 1st, 1898, and any delinquencies will be carefully looked into.

Speculation in Colorado stocks has absorbed most atttention, and of those traded in Small Hopes went up to $1.10, after payment of the 10c. dividend on June 18th. Lillie, which, it is expected, will increase its dividend this month, rose to 91c., receding to 89c. Elkton Consolidated paid another monthly dividend of 2c. on June 20th, and is selling at 90@91½c. Portland also paid the usual monthly dividend of 1½c. on the 15th, and at the close the stock rose to $1.20 from 98c. early in the week. Argentum-Juniata, which held its annual meeting on June 14th, and was won over by the W. P. Bonbright party, was bid for at 25c., with no offerings. Golden

Fleece reports a very light production for May; the stock sold down to 23½c. one day this week, but recovered to 27c. on June 23d. Lagonda, the Springdale property listed on the Mining Exchange, went up to 23¼c., but closes at 22¾c.; this owing to a reported strike in the Wyoming lode, owned by the company.

Little Chief sold on the Consolidated Exchange at 20c., against an asking price of 25c. The stringer recently encountered on the property continues to show up well, and on the strength of this the stock is well maintained. Copper Rock was recently called on the Mining Exchange, and sold at around $3 per thousand shares. The Copper Rock Consolidated Gold Mining Company was organized on February 1st, 1896, with a capital stock of $1,500,000, divided into as many non-assessable $1 shares. The officers are S. V. P. Vanduzen, president; D. D. Rees, vice-president and treasurer, and George E. Grant, secretary and manager. The company claims to own properties in the Gold Hill mining district, Boulder County, Colorado, and in the Leadville district, Lake County, Colorado. The main office is in Denver.

Homestake production in May was something over $262,000, while for the first half of June the output was 7,177 oz. gold. The company will pay double dividends amounting to 50c. per share on June 25th. Deadwood-Terra has been bid down to 30c. on the Consolidated Exchange, but there were no sales.

Horn Silver of Utah pays another dividend of 5c. per share on June 30th, and the stock is fairly steady.

Comstocks are featureless. Chollar has levied an assessment of 15c., delinquent July 12th, against 20c. in February, and is quoted at 7c.; Savage, Potosi and Belcher have all levied assessments which are delinquent in July, and each is higher than the preceeding assessment. The Fox assessment of 10c. per share on Hale & Norcross has been postponed to July 12th, and this stock is now selling at about 55c. An assessment of 25c. has been levied on Consolidated California & Virginia, delinquent July 22d, and this stock has gone down to 30c., with few buyers.

The California stocks have been very quiet. Standard was bid for at $1.60, against $1.75, and Brunswick is held at 13c.

There was sold at auction this week 40 shares of American Coal Company at 120¼.

Boston. June 23.

(From our Special Correspondent)

The volume of business done in copper stocks during the past week has been small, and but little interest manifested; still the market closes with material gains over prices last reported. Montana has been the feature, recovering to $205¼, from the low figure of $195¼, and closes with strong buying at $203. Osceola was sold down to $46⅜, but a sharp rally followed to $51½, and the stock closes with a good demand at about $50. There is not much to say of the rest of the group, prices fluctuating fractionally from day to day, but on the whole, the list closes firm. Calumet & Hecla holds its great rise, selling at $565 ex-dividend. Tamarack sells strong at $160. Butte is higher at $24¾, after selling at $22½, and the friends of the stock are persistent in the statement that the property will ultimately become a part of the Montana consolidation on favorable terms. Old Dominion is steady at $25, and Arnold at $15. Centennial is lower at $13¾, after selling at $15. Franklin is dull at $13½, and Wolverine at $22½. Quincy has gained a little, selling strong at $114, and Baltic is higher, at $20½, gaining from $18½. More Atlantic than usual has come on the market, but there has been good buying, the price holding firm at about $30. The low-priced stocks are active, but do not advance, which confirms the idea that there are some matched orders in the room by interested parties. Humboldt is quoted at $4½@4⅞; Allouez from $4@4½, and Ashbed at $3½. A few shares of National came out at 75c.

The only quicksilver stock quoted is New Idria at $6¼.

Gold stocks are extremely dull, with the exception of Cochite, which, on long transactions, advanced to $8¼, closing $8@$8½. The mill will not start before July 10th. Merced sold at $4⅛; Ysabel at $4¾, and Gold Coins at $1; all closing very dull.

Los Angeles, Cal. June 10

(From Our Special Correspondent.)

Sales for the week ended to-day were as follows, prices being per 1,000 shares: East Amagosa, 10,000 shares at $1@1.25; Gold Bug, 1,000 at $10; Lucky Star, $5, no sales; Mohawk Acton, 75,000 at 50c.@$1; Maganetta, 16,000 at $7.50@8.50; Old Dominion, 1,000 at $3@3.50; Rand Mountain, 28,000 at $1.25@1.50; Pacific Consolidated, 43,000 at $1@1.25; Wedge, 700 at $7@8; Empire Copper (unlisted), 25c, no sales; Grand Central, 2,000 at $2@2.25; total sales, 176,700 shares, against 854,100 shares last week.

Salt Lake City. June 18.

(From Our Special Correspondent.)

Dog days and a dearth of outside orders have taken the vim from the mining share market. Never was the climatic contrast more strikingly marked in Salt Lake and the first out-and-out summer weather is apt to exert a quieting effect. While the volume of sales is not up to the recent standard, several of the prominent active traders close higher and firmer than on last Saturday. Generally there is more good news from the mines than contrary reports, which should indicate further improvement in these shares.

Chloride Point is stronger. The mill has begun its initial run and all that can be gleaned is favorable. Mercur has moved in a week from $7.05 asked to $7.35 bid. It is practically admitted that the mine is not earning the $25,000 dividend, but another enlargement of the mill is promised. Geyser-Marion, though lower than last week, is higher than 2 days ago. It seems the ore is lower grade than counted on, but cheering news is constantly sent out. Northern Light continues weak. Its future depends on the development of the Chloride Point vein. Sacramento pays its $5,000 dividend June 28th. The shares do not improve in keeping with the alleged showings of the mine. Little Pittsburg did business at about stationary figures.

Bullion-Beck is firm. Condition of mine excellent, but trouble is experienced in making a new contract for ore treatment. Centennial-Eureka is unchanged. South Swansea declared a $7,500 June dividend in spite of the current report that this would not occur. Grand Central is higher and very firm. Mammoth did business above $2 and has entirely recovered from the recent slump. The frictions among the large owners are smoothed over, at least for the present. Another $20,000 dividend is looked for by July 1st. Four Aces has re-elected the old officers. Swansea's annual meeting will be held Monday. The directorate which has made it a reliable dividend payer will be placed in charge for another year. Since last Saturday Sunbeam advanced from 11¾ to 16½c. bid, due to larger ore exposures. Homestake is higher for a like cause.

Horn Silver is a shade firmer and there are calls on this market. It is an open secret that a $20,000 quarterly dividend will be paid within 10 days. Ajax is enjoying a quiet. Dexter is apparently gaining. Dalton & Lark is a little higher in the bid, possibly in anticipation of more active mining soon. Galena holds its own. It is said shipments of high grade lead products will be maintained. Utah ends the week a few points under last Saturday in spite of the better quotation for lead.

Ontario is being quietly inquired for. There are whispers of greater life about the property, but the management affirms that no change will occur while silver is under 60c. An impression prevails that the mine's physical condition is far ahead of 6 months ago. Silver King has receded a shade from its top quotation; however, it well leads the Utah dividend-payers. Anchor is weaker. Daly has moved up a few points. Daly West is less strong than last Saturday, attributable to a longer continued period of inactivity. Sunshine has fallen off. It is intimated that the prospect of soon resuming operations at mine and mill is less hopeful. Daisy is a new stock of the West Dip portion of Mercur, which is liable to cause a stir in the near future.

San Francisco. June 18.

(From Our Special Correspondent.)

It is the old story this week of a dull, heavy market and low prices; and really one could hardly expect anything else. The weekly letters from the Comstock were not encouraging. Sierra Nevada's little find has apparently been worked out, and though an attempt was made to push up the stock it failed, because nobody cared to buy. Another 25c. assessment on Consolidated California was a damper on the market, and sent that stock down to a very low figure.

Some prices noted are: Sierra Nevada, 62c.; Consolidated California & Virginia, 30@35c.; Ophir, 24@25c.; Best Belcher, 18@19c.; Yellow Jacket, 16@17c.; Mexican, 11@12c.; Chollar, 10c. For Standard Consolidated $1.50 was bid, with no sales.

According to the sworn statements filed at their offices, the following companies had cash on hand June 1st, 1898: Alpha Consolidated, $1,012; Andes, $2,093; Alta, $1,122, with bills payable of $2,000; Belcher, $326; Best & Belcher, $9,881; Bullion, $2,410; Caledonia, $8,527; Confidence, $1,179; Consolidated California & Virginia, $4.645; Consolidated New York, $156; Chollar, $389, with bills payable of $5,779; Crown Point, $2,693; Consolidated Imperial, $1,725; Exchequer, $270; Gould & Curry, $4,148; Hale & Norcross, $6,511; Julia Consolidated, $1,917; Justice, $664; Mexican, $6,829; Occidental Consolidated, $571, with bills payable of $1,000; Ophir, $5,677; Overman, $2,103; Potosi, $794, with bills payable of $1,000; Savage, $30; Sierra Nevada, $28,266; Segregated Belcher, $310; Silver Hill, $307, with bills payable of $1,300; Standard Consolidated, $52,102; Syndicate, $971; Union Consolidated, $3,347; Utah Consolidated, $1,147.

London. June 14.

(From Our Special Correspondent.)

The Mount Lyell mine continues to engage the attention of speculators and investors. There has been another fall this week and the quotation now stands at £9. There is a strong bear element observable but there is little buying or selling. It is impossible at present to judge as to the real object of the bears, but presumably it is the desire of Australian holders to acquire the stock of the late Mr. Crotty as cheaply as possible. This professional bear element is quite distinct from the selling by holders who were frightened by the engineer's recent report, or who considered that the shares would never get any higher. All sorts of wild rumors are being disseminated by the professional bears, but they are mostly canards. The Exploration Company is dragged in for the benefit of the bears, and the statement is made that their expert has just examined the mine and reported unfavorably. As the Exploration Company had nothing to do with the Mount Lyell flotation, and is not a shareholder now, all such rumors are quite beside the mark. The Exploration Company certainly sent one of its Australian representatives to the mine to advise whether it was policy to apply for any of the new issue that is to be made in a week or two. But apart from this it has nothing to do with the mine. As a matter of fact, the present position of Mount Lyell on the market has very little to do with the mine itself. There is every probability that the policy outlined in my last letter will be adhered to and that extra furnaces will be built so as to treat 1,000 tons a day.

The West Australian market has continued brisk and there is plenty of business among Kalgoorlie gold producers. The Bottomley group is quiet at present and will continue so until the reconstruction of the Market Trust is completed.

The South African market has been featureless, in spite of the publication of the figures for the May output, which once more constituted a record. The figures were 344,160 crude ounces from the Rand and 20,856 crude ounces from other parts of the Transvaal. The increase is chiefly due to the fact that Robinson Deep has been added to the list of producers, and its figures were 7,700 oz. Simmer & Jack also showed an increase of over 1,000 oz.

The American section is quiet and no new companies have been issued. The Whitaker Wright group is, however, getting ready for a campaign at an early day, and we may expect very extensive flotations of British Columbian properties at any time now. This group, which consists of Whittaker Wright, his London & Globe Finance Corporation, and the British American Corporation, has now practically completed the purchase of the Le Roi properties for £600,000 in cash, a very good bargain for the sellers. English companies are to formed to purchase the mine from the two "corporations." In this way a big profit will be netted, and further working capital reased for development. The new companies are to be the Le Roi Mining Company, Limited, with a capital of £1,000,000; the East Le Roi Mining Company, Limited, and the West Le Roi Mining Company, Limited, each with a capital of £500,000. There is also to be the Columbia Kootenay Mining Company, Limited, with a capital of £500,000 to acquire the Columbia and Kootenay claims. There will be others to follow, but the details are not yet arranged. These companies will be floated as quick as money comes in from subscribers.

MISCELLANEOUS DIVIDENDS.

Texas & Pacific Coal Company, of Fort Worth, Texas, dividend of 1 per cent, payable July 20th.

Westinghouse Electric and Manufacturing Company, regular quarterly dividend of 1¾ per cent. on the preferred stock, payable July 1st.

LATE NEWS.

By Telegraph.

(From Our Special Correspondent.)

Park City, Utah, June 22.—Utah's largest mining town is in ashes. A fire started in the American House, shortly after 4 a. m. Sunday, which was well under headway before the alarm was responded to. A strong north wind spread the flames, and from the first it was very evident that the town was doomed. Salt Lake City and Ogden were telegraphed to for aid and engines were hurried to the scene of the conflagration. All dwellings, churches, hotels, the City Hall, both bank buildings, every drug store, all general supply stores, etc., and all but three saloons are wiped out. Many are homeless and even without clothes. The flames were under control at 9.30 a. m., though in some directions there was nothing combustible left to feed on. The entire residence portion of the town is destroyed.

By hard work the Marsac Mill stands uninjured, but the Crescent Concentrator is no more. The Union Pacific depot was saved by blowing up the near-by buildings. The loss, first placed at over $1,000,000, is not less than $850,000, while the insurance is about $200,000. It would be a severe blow at any time, but it is doubly so now, just as the camp was beginning to recover from the depression caused by the Ontario shut-down last summer.

STOCK QUOTATIONS.

NEW YORK.‡

NAME OF COMPANY.	Location.	Par val.	June 18. H.	June 18. L.	June 20. H.	June 20. L.	June 21. H.	June 21. L.	June 22. H.	June 22. L.	June 23. H.	June 23. L.	June 24. H.	June 24. L.	Sales
Alamo	Colo	$1	03¾	03	.03	02¾	.03	02¾	.03	02¾	.03	02¾	.03¾	02¾	67,000
Alice	Mont	25							.80						100
Amador	Cal	2	.03				.03								4,000
Anaconda Gold	Colo	5					40		42		45				1,000
*Anchoria-Lel	"	1		74		.75		.74		74		.74		.74	
Argentum-Jun	"	2													
Best & Belcher	Nev	100													
*Bost. & Mont	Mont	25	197	196¾	200	195									
Brunswick	Cal	1			.16		.16		14						2 4.0
Bullion	Nev	100													
Cannon Ball	Colo	1							.008		008				2,0 0
Chollar	Nev	100							07						200
Comst'k T,b'ds	"	100					.02								1,000
Con. Cal. & Va.	"	1 0			80		30				.81				9.0
Con Imperial	"	10													
Copper Rock	Colo	1	.004	.003	.0045	.004	.0045	004	.003		0035		0035	.003	67,000
Cr. & Cr. Creek	"	1			.11										1,000
Crescent		10													
Crippie Cr. Con.	"	1	.09¼	.09¼	09⅝	09	.09¼	.09	.10	.09¼	09⅝	.09¼	09¼	.09	59,000
Crown Point	Nev	100													
Deadw'd Terra	S.Dak	25													
Elkton Con	Colo	1	91	90	9	9	91¼	.9					95		1,800
Garfield-Grouse	"	1	.14	13⅝	.14	.13¼	14	13	.13	12¼	12¾	12¼	13	.12⅜	4 , 0
Golden Fleece	"	1	.30		30		.25	.23⅝	.26		27	.2	.24	.22	3,800
Gold Coin, Vict	"	1													
Gold Magnet	"	1			.0025		.003				.0 3	.0025			5,000
Gould & Curry	Nev	100													
Hale&Norcross	"	100							70						10
*Havana	Mont	5	76	.75	76	.75	.75¾	7	.76	75		.75	76	.75	
*Homestake	S.Dak	100		48.00		49†		48 00		48 00		48 00			700
Horn Silver	Utah	25													
Iron Silver	Colo	30			70						70				700
Isabella	"	1	27	26	27	26			.27	26	.27¾	26¾	.28	.26	3,400
*Japan	"	10	5 00	2 50	5.00	2 50			5.0	2 50		2 50	3 00	2 50	
Jefferson	"	1	05	04¾	.04¾	.04¼			.04¾	04¼	.05¼	.04¾	0	.04½	56,000
Justine	"	1	02¾						05		05	02¼	.02		8,000
King & Pemb.	Ont	10									28	2			1,000
Lagonda	Colo	1	.23	.23¾	.23¾	22¾	23¾	.23⅜	.23¾	22⅜	23⅜	.22¾	23⅛	.22	8,800
Leadville Con	"	10													
Lillie	"	1	90¾	.89	.91	.90	89½	89					.89		2,200
Little Chief	"	50											2		500
Mexican	Nev	100			.10										200
*Miami	Colo	1													
Mollie Gibson	"	5					25								500
Mt. Rosa	"	1	13	12¾	.13	.12½	13	12⅝	.13	12⅜	.13⅜	.13	13⅜	.13	44,000
Old Gold	"	1													
*Ontario	Utah	100	5 00	3.00	5 00	3 00	5.00	3 00	5.00	3 00	5.00	3.00			
Ophir	Nev	100									.25				500
Osceola	Mich	25	49 00	47 7	47.13	46 50									
Pharmacist	Colo	1													
Phœnix Con	Ariz	100	23	19	.20	19	18				.18				1,100
*Pilgrim							.0032	0 3							28,000
Plymouth	Cal	10													
Portland	Colo	1	1 13	98	1.03	1 02					1 20				1,400
Potosi	Nev	100									09				1,000
*Quicksilver	Cal	100	2 50	2.00	2 50	2.00	2 5	2 00	2.50	2.00	2.00	1.25			
*do. pref	"	100	6 75												100
Quincy	Mich	25	115	113											
Rocky Mtn	Colo	1													2,000
St. F. Cariboo	B.Col		2.75	2 63	3.00	2.50	2 75	2.50	2 75	2 50		2.50	2 75	2.50	
Savage	Nev	100													
Sentinel	Colo	1	.0059	0057	.006	.0052	005	0 42	.0046	.0034	003	0031	.004	.0032	236000
Sierra Nevada	Nev	100	63												
Small Hopes	Colo	20			1 10										400
Standard Con	Cal	100	1.6						1 70		1 70				3.0
Syndicate	"	10													
Tamarack	Colo	1	169	157	160	153½									
Union	"	1	11⅝	11⅜	11⅛	11⅛	12¼	12⅛							22,000
Union Con	Nev	100													
Utah Con	"	100	05												500
*Waldorf	Colo	1	06											.08	
Work	"	1	04	03½	04	.03½			04						5,500
Yellow Jacket	Nev	100									15				400
*Yukon	Can	1	14	10	14	10	14	13	14	10		10	14	16	

COAL AND INDUSTRIAL STOCKS.

*AmericanCoal	Md	$25	140	115	140	115	140	115	140	115	140	115			
Central of N. J	N. J	100	95	94¾			94¼		94		93⅛	95	96½		3,225
*Col. C.& I. Dev	Colo	100	1	⅝	1	⅝	⅝	⅝	1	⅝	1	⅝			
Col. Fuel & I	"	100					21¾		21						3 0
Col.& H C.& I	Ohio	100	6⅜				6	5⅜					6		125
Con.Coal	Md	100							44						60
Del. & Hud	N. Y	100			108			07⅜		109½	109				27
*Edison E.L of B	"	100	110	106	110	106	110	106	110	107	119	107			
do. E.L of N.Y.	"	100							126						100
General Elec	"	100	38	37⅜	37⅝	37¼	38	37¼	37⅝	37⅜	37⅜	37	37⅝		2,263
Illinois Steel	Ill	100	55		56				56	55	57	55	56¾		1,435
*Maryland C.pf	Md	100	53½	50	53¾	50	54	50	53¾	50	54	50			
Minnesota Ir	Minn	100			74	73½			73		72⅝		73¾		711
National Lead		100	34¾		33⅝										40
New Central C	Md	100			79								81½		220
N. Y., Ont. & W.	N. Y	100	15		15								5		610
N.Y., S.& W. pf	"	100													
Oregon Imp	Ore	100					29								100
*Penn'lv'nia C.	Pa	100		325		340		340		340					
Phila. & Read	"	100	19½	19	19						19		18⅞		1,940
" " 1st pf.	"	100	4 ¾				45½		45⅜		46⅛		45⅝		1,246
*†Standard Oil		100	439	438	437	436	438	436	439	437	440	439			
Tenn.C.,I.&R.R.	Ala	100	24		23¾	23½	24	23¾	24	23⅝	25⅛	23¼	24⅝		1,885
Worth P.,pref	N. Y	100													

Official quotations. New York Stock Exchange Mining, 2,600 shares; other stocks, 24,317 shares. Consolidated Stock and Petroleum Exchange: Mining, 19 430 shares; Mining ex change, 6 0,200 shares. Total shares sold, 646, 67 *Bid and ask quotations. †Ex-dividend.

PHILADELPHIA, PA.‡

NAME OF COMPANY.	L'cation.	Par Val.	June 16. H.	June 16. L.	June 17. H.	June 17. L.	June 18. H.	June 18. L.	June 21. H.	June 21. L.	June 21. H.	June 21. L.	June 22. H.	June 22. L.	Sales
Cambria Iron	Pa.	$50	43 50		43 50								43 25		210
Choctaw, pref.	I T.	20	37 75	37.00	38 00	37 25			37 50	37.00	37 38	37 00	37 00	36 75	3,855
Hunt & Br.Top	Pa.	50													
" pref	"	50			40 50	40 25									8
Lehigh Nav	"	50					38 88								21
" Val	"	50	22 50		22 50										65
Penna. R. R.	"	50	58 00	57 88	57 88	57.75	57 88	57 75	57.75	57.50	57 75	57.63	57 75	57 50	834
*Penna. Salt	"	50						103				103		0.3	
Penna. Steel	"	100					16.0		16 0						15
" " pf	"	100													
United Gas Im	Pa.	50	110¾	109¾	110¾	110¼	110¾	110¼	110¾	110¼	110¾	110	109¾	99¾	5,954
Welsb. of Can	"		1.78	1.50	1 7		1 7	1 63	1 38				1 5		1,623
" Com'l	"	100	20 0	15.00	20 0	9 3	21 00	20.50			21 50		21 5	21.00	2,216
" " pf	"	100	63.50	63 00	75 0	73.50	75 00	74 50	74 50						,375
" Light	"	100	53 50	45 00	55	54 00	54.50	54 00	54.75	54.00	51 50	53.88	54 0	3.50	4 559
West. Coal	"	50	50 00												45

‡Official quotations Philadelphia Stock Exchange. Total shares sold, 20,788. * Bid and ask quotations. † Ex-dividend.

PITTSBURG, PA. June 22

NAME OF COMPANY.	Location.	Par val	Bid.	Ask.	NAME OF COMPANY.	Location.	Par val	Bid.	Ask.
Allegheny	Pa.	$100			N.Y. & C. Gas	Pa.	$50		
Carborundum	"	100			Peoples' Natural Gas	"	50		
Chartiers Valley	"	100	9	10	Peoples' Pipeage	"	25	16	
Enterprise Mining	Colo.	5			Pennsylvania Gas	"	50		
Lustre Mining	Mex.	10			Philadelphia Gas	"	50	30¼	31
Mansfield Coal	Pa.	50			Silverton Mining	Colo.	10		
Manufact. Gas	"	50			Wheeling Gas	W.V.	50	24½	

BOSTON MASS.†

NAME OF COMPANY.	Par val.	No. of shares.	June 17. H.	June 17. L.	June 18. H.	June 18. L.	June 20. H.	June 20. L.	June 21. H.	June 21. L.	June 22. H.	June 22. L.	June 23 H.	June 23 L.	Sales
Ætna Con.. q	$5	100,000													
Allouez, c	25	80,000			4 75	4.50	4 50	4.00	4.75	3.75	4 75	4 50	5.00	4 63	6,960
Anaconda, c	25	1,200,000													
Arnold, c	25	40,000			15.38	15.25	15 00	14 75	13 00	14 88	15 00		15 25	15 00	1,415
Ash Bed, c	25	40,000			3 75	3 50	3.50		3 63	3 50	3 75	3.63	3 63	3.50	1,070
Atlantic, c	25	40,000			30.00	29.50	29 38		30.75	30 00	29 25		30 00		201
Baltic, c	25	100,000			19.50	19 00	19.13	18.50	20 88	9 63	21.00	20 25	20.75	20 00	4,089
Bonanza, g	10	300,000													
Bost. & C.C., g	1	200,000													
Bost.&Mont,gsc	25	150,000			197	193¼	199¼	195⅛	2 3¼	199¼	2 5	201	203	202	9,752
Breece, l	25	200,000													
Butte & Bost., c	10	200,000			22 50	22 00	23 50	22 38	24 13	23 25	24.00	23 50	24 7	23 75	6,286
Cal. & Hecla, c	25	100,000			550		555		560		565	560			107
Catalpa, s	10	300,000													
Centennial, s	25	80,000					14.25	14 00	15 00	13 75					540
Dominion Coal	100	150,000			24.00	23.00	23.50		23 25	22 50	22.75	22 00	23 00	22 75	3,201
do. pref	100	30,000													
Franklin, c	25	40,000					13 00	12 50	13.50	13.00	13.50		13 25		620
do. rights															
Gold Coin, g	5	200,000													
Humboldt, c	25	40,000			4.88	4.75	4.75	4.50	4 75		5.00		5 00	4 75	3,545
Illinois Steel	100	186,500							55 00				56 50	55.00	2,807
Merced					4.13										100
*Napa	7	100,000				7.00		7.00		7 00		7.00		7.00	
National	25	40,000											75		50
New Idria	5	100,000									6.25				20
Old Dominion,c	25	150,000			26 00	24 75	25.00	24.25	25 75	24.75	25 50	24 75	25 0	24.63	5,407
Osceola, c	25	50,000			48 00	46 50	47 25	46.38	51.00	47.50	51.50	49.50	53.50	50 00	6,794
Parrot, s c	10	230,000			23 00		23 00								70
Pioneer, g	10	100,000			5 88	5 75	5 88	5 75					5.88	5 63	9 0
Quincy, c	25	100,000			143¾		114		114		115	114	115	114	123
San. Ysabel, g	5	100,000					4 75								50
Tamarack, c	25	60,000			158	155	155		161	160	160				69
*Tecumseh, c	25	40,000			3.00	2 75	2 88	2.63	3 00	2.63	3.00	2.63	3 00	2.50	
Wolverine, c	25	60,000			22 50		22 00		22 88	22.00	22 50		22 75		815
..															
..															

† Official quotations Boston Stock Exchange. * Bid and ask. Total shares sold, 54,051.

BALTIMORE, MD.‡ June 23.

NAME OF COMPANY.	Location.	Par value	Bid.	Ask.	NAME OF COMPANY.	Location.	Par value.	Bid.	Ask
Atlantic Coal	Md	$10			Howard C.&C	Md	$5		
Big Vein Coal	"	10			Newburg Orrel C	"	25		
Consolidation Coal	"	100	43		Silver Valley	N. C.	5		
George's Creek Coal	"	100	108						

‡Official quotations Baltimore Stock Exchange.

CLEVELAND, O. June 22.

NAME OF Co.	Iron Range	Par Val.	June 22. Bid.	June 22. Ask.	NAME OF Co.	Iron Range.	Par Val.	June 22. Bid.	Ask
Aurora	Gogebic	$25		$4	Lake Superior	Marquette	$25	$24	$26
Chandler	Vermillion	25	$34	35	Minneota	Verm. & Mes	100	72	75
Cleve'd-Cliffs	Marquette	100	45	36	Pitts & L'keAng	Marquette	25	9	100
Jackson	"	25			Republic	"	25	9	10

COLORADO SPRINGS, COLO.‡

NAME OF COMPANY.	Par val	June 13. B.	June 13. A.	June 14 B.	June 14 A.	June 15. B.	June 15. A.	June 16. B.	June 16. A.	June 17 B.	June 17 A.	June 18. B.	June 18. A.	Sales.
Alamo	$1							03				.45	.45½	1,000
Anaconda	5					46		45		46				3,000
Arg'ntumJ	2	.26				26¼		.26¼		.25½	26			4,' 75
Bob Lee	1					.002½								1,' 00
Cr. & C. C	1	.03½								03½				2,000
C. C. Con	1							09½				.09½	09¼	1,000
Des Moines	1			01										2,000
ElktonCon	1	.88	.89¼	.89¼	91	.9 3⅛	91¾			.90	.90¾	.89½	90¼	147,050
El Paso G	1	.07¾				.07½		9)	.90¼					2,500
Fanny R	1	.18½	.19	.18¾		.18½								11,5.0
Favorite	1													
Findley	1			.03½		.18¾								3,000
Franklin	1											04¾		5,000
G'ld Crater	1													
G'd'n Fl'ce	1													
Gold & Gl	1													
Hayden G	1													
Ing. Con	1					05		.05¾						5,000
Isabella	1	.25¼	26	26⅜	.27	26¼	.28	.25½	26⅜	.25⅜		25⅜		36,258
Jack Pot	1	.04⅜	04¾	04¾		01¾								1 ,00
Lexington	1													
Lillie	1	89½				89				84	.87			1,8.0
Magnet R	1													
Marion	1													
Matoa	1	.15⅜				16				.16⅜	.16¼	16⅜		8,000
Mollie G	5	.21	21½					.22¼				20½	.21	3,500
Moon-A'c'r	1	.87½	91	.91	91½	.90	91¾	.90¾	91¾	.91¼	91¾	92	94	21,700
Mt. Rosa				.12								.12		2,000
New Haven	1	01¾				01¼								5,000
Pharmacist	1	.05¾				05⅜						05¾		8,000
Pilgrim C	1													
Portland	1	1.01⅝	1.02⅛	1 01⅞	1 02	1.01⅝	1.02	1.01⅛	1.02⅛	1 02⅛	1 03⅜	1.05	1.05½	30,500
Pr. Albert	1													
Specimen	1	03¾	.03½					03¾						9,000
Theresa	1	.06¾		06½				.06¾				06¾	06¼	7,000
Trachyte	1			.01¾						0 3⅝		0 3⅝		4,000
Union	1	.11⅝		.11¾		.11¾	.11⅝	.1 ¾	11⅝	.11⅝				5,000
Work	1	.03		.03¾	.03⅜	03½	.03⅜	.04	.04	04⅜	.04			68,' 00

‡ Official quotations Colo. Springs Mining Stock Exchange. Sales: Listed stocks, 4 8,878; unlisted, 112,150; total, 513,028 shares.

By Telegraph.

NAME OF COMPANY.	Par Val.	June 17. B.	June 17. A	June 18 B	June 18 A.	June 20. B.	June 20. A	June 21. B	June 21. A	June 22. B	June 22. A.	June 23. B.	June 23. A
Alamo	$1	02¾	03	0.3¾	.03	02⅜	02¾	02⅝	.02⅜	.12½	02¾	.02⅜	03
Anaconda G	5	.45½	.46	.45¾	.46	.43¾	47	44	.5)	42½	45	.43½	.44
Anchoria-Leland	1	.71	8)	73⅜	.79	75¾	76	.75½	.56	76	79	.75⅛	.77
Argentum-Jun	2	26	.26¼	.26	.25¼	.23⅞	.30	.26	.27	27	.28	.27	27¼
C. C. Con	1	.09½	.09¾	.09½	.09¾	.09½	09¾	.09½	.09¾	10	.09¾	.09¼	10
Elkton Con	1	.90¾	.90¾	.89¾	.90	.91⅜	.91½	.94⅜	.94⅝	.96⅜	.96¾	.94¼	.94⅜
El Paso G	1	.07¾	.18½	.08¾	08¾	.08	.18½	09	.09⅜	09	09¼	.09⅜	09¾
Fanny Rawlings	1	.18	.18¾	.18	.18¾	.18¼	.1	.18¼	19	.18¾	19⅜	20	20¼
Garfield-Grouse	1	.12¾	.14	.12¾	.14	.18	.14	.12⅜	.13	.12¾	.13	128	.13
Gold Coin, Vict	1	.96	97	.96	97	.93	96½	.94	.95	96	99	.96½	.97
Gold King	1	.50	.52½	.50	52	53¾	53	.51	.55	.52	.54	55¾	56
Golden Fleece	1	.25	.40	.23	31	.23	.30	.25	30	.20	30	.20	.30
Isabella	1	25¼	.25¾	.25¼	.26	.26	26¼	.26	26¼	26¼	.26½	.26¼	.26¼
Jefferson	1	.04¾	.05	.04¾	.05	.04¾	05	.4¾	.05	05	.06¼	0.4¾	.07
Lillie	1	84¼	.85	.84¼	.85	.80	.87	.80	9)	.82	.94	87	.90
Matoa	1	.16¾	.168	.16¾	.16¾	.16	16¾	16¼	.16⅜	16¾	17	16¾	16¾
Mollie Gibson	5	.21	.23	.20¾	.20¾	.20	.20¾	.21¼	21¾	.21	.22	2 3¾	.21
Moon-Anchor	1	9 3⅝	9 5¾	.9 2¾	.93¼	.95	95¼	9 3⅝	.96¼	.96¼	.96¾	.93⅜	.95¾
Mt. Rosa	1	.12	.13¼	.12	.12¼	12	.13¼	.12	.13¼	.12¾	.13	13	13¼
Pharmacist	1	.05¾	.06¾	.05¾	.05¾	.05¼	.05¾	.05¾	.06	.05¾	.05¾	05¾	.15¾
Portland	1	1 03¾	1 03¾	1 05	1.05¾	1.09	1 09¾	1.10	1 14	1.17	1.17¾	1.15	1 16
Union	1	.11¾	.11¾	11¼	.12	.12½	1 3⅜	13¼	.15	.15¼	.7¾	.18	
Work	1	04	.04¾	.03¾	.04	.03¾	.03¾	.03¾	.03¾	.03¾	03¾	03¾	.03¾

STOCK QUOTATIONS.

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	June 13. B.	June 13. A.	June 14. B	June 14. A.	June 15 B	June 15 A.	June 16. B.	June 16. A.	June 17. B.	June 17. A.	June 18. B.	June 18. A.	Sales.
Mines:														
Anac'da G..	$5	39	48¼	.44	.46	42	.46	.43	.48	.45	.50	.44	46	500
Arcadia, C	1	.01¾	01⅝	.01⅝	01⅝	.01⅝	.....	.01⅜	.....	01⅜	.01⅜	0⅜	.01⅝	.....
Arg. Jun...	2	.25½	.26½	25	.23	26	.....	.....	.....	.....	.....	.25⅜	.....	300
Big Six....	1	06	.15	03⅛	.....	06	.. .	03¼	.....	.07	.....	.06	.....	200
C. C. Con..	1	06	....	08¾	.....	08¾	.....	.08¾	.....	.08¾	.....	09	09¼	.....
ElktonCon.	1	.88	.....	9	.....	.91	.92	.90¾	.....	9	92	.90	.90⅜	1,500
El Paso, G..	1	.07	08	.06¾	.....	.07⅜	07¾	07	.....	.07	.08	.08	.08¾	4 000
Enterprise.	1	03	.....	04	05	.04	05	04¾	.....	03	.....	03¾	.....	1,000
Garf. Gr....	1	.13¾	.4	.13	.....	13¼	14¾	13	.14¾	13	.....	13	14¼	1,500
Gilpin & C	1	.29	.29½	.29¼	.29½	29⅛	.29¾	30	.32	.30¾	.30½	30½	30¾	3,500
Gold Coin..	1	.96	.....	90	.....	.95	1.00	90	1.00	95	.98	95	.95	1,000
Golden Fle.	1	.27	.40	.26½	.35	25	.30	25	.42	.25	35	25	.38	250
Ironclad..	1	.02⅜	.....	.02⅜	02⅝	.02⅜	02⅝	02⅜	03¼	.02¾	029	.02⅜	02⅝	2,000
Isabella....	1	.25⅜	26	.27	.....	27	.....	.....	25¼	25	.26	25¼	25⅞	4,500
Jefferson...	1	.04¼	.05	.04¾	.04⅝	04⅜	.04⅝	04¼	04¾	.04⅜	.05	.04⅝	06	1,000
Lillie.....	1	.88	.....	.88	.....	88	.89⅛	88	.90	.....	.....	84	.....	2,100
Maton.....	1	15¾	15⅜	15½	16⅜	15⅝	16⅜	.....	.....	16⅜	.17	16⅝	16⅞	6,000
Moon Anc'r	1	.....	.....	.90⅜	95	91	.....	90⅛	92	90⅛	92	.94	....	2,600
Mt. Rosa....	1	.13	.14	.....	.....	.12	.....	.12⅛	.13¼	12⅛	.....	.12	.....	.....
Ophir.....	1	09	.11	.09	10¾	09¾	.10¾	09⅝	.11	.09	.....	.10	.....	1,000
Pharmacist	1	.05¾	05¾	.. . .	..	.05⅝	.05⅝	05	.05⅜	05¼	.05¾	05¾	05⅜	1,000
Portland..	1	.....	.....	1 01	1 02	1.01	1.02	.99	.....	1 04	....	1.03½	1.07	6,000
sacram'nto	1	02¾	.03½	.02⅜	02¾	.02⅜	.02¾	.02½	.02¾	02¾	....	.02⅜	02¾	3,000
Specimen..	1	.03	.04¾	.02⅝	02¾	02¾	.....	02¾	.03	02¾	.....	03¼	.03¼	1,000
Union Gold	1	.11	.11¾	11	.12	.10	.....	.11	.12	11¾	.....	11¾	.11⅝	300
Va. M....	1	04	.....	04¾	..	.04¾	.04½	04¼	04¾	04¾	04¾	04¾	04⅝	1,000
Prosp'cts:														
Aetna.....	1	.001⅜	002¼	.001⅜	.....	.00 3⅜	.....	002	.002½	.001¾	.....	.001⅜	.....	11,000
C. C. Imp..	1	001	.01⅜	01	.001⅜	.001⅜	.01⅛	.001	001¾	.001	.001⅜	.01	.001¾	.....
Gene Field	1	.001¾	.001⅜	001¾	.001⅜	001⅜	001¾	.001¾	.....	.001¾	002	.01⅜	.....	19,000
Geo. Wash	1	.002⅜	004	002⅝	.....	.002⅜	003¼	002½	.....	.....	.....	0 2⅜	.003¾	.....
Gilpin Four	1	.004⅜	.005	004⅜	.005¾	004⅜	005¼	004¼	005	.0 4¾	005	.004¾	005	8,000
New Haven	1	.01¾	.....	.01	.....	01	..	0 1¾	.01⅜	01⅜	.....	.01	.....	.....
Old Gold....	1	003	.003½	002⅜	003¼	002⅜	003¼	.002¾	.003	.002⅜	003	002⅛	002⅝	6,000
Pilgrim ..	1	.002½	.003¼	002¾	003¼	002⅜	003⅝	002⅜	002⅝	002⅜	003¼	002⅜	002¾	1,000
Pine Creek	1	.002⅜	003	001⅝	003⅜	002	.....	0 2¼	002¾	002	002⅝	001⅜	...	6,000
Puritan	1	.002¾	.003	00 3⅜	003½	.002	.....	.0 2¾	002¾	002	002⅛	.001⅜	.....	5, 00
Republic...	1	.02	.....	.02⅜	.....	.027⅛	.....	.....	.....	.02⅜	.....	.02⅜	.03¾	100
Tamarack..	1	004⅝	.....	004⅛	005	.004½	004⅜	004½	004¾	0 4¾	.0 4⅜	004⅝	.....	.....
Wh.of For C	1	002½	003⅛	.002⅛	.....	.0 2¾	003¼	.0 2¾	0 3	.003	003⅛	0 2	.....	.....

‡Official Quotations Denver Stock Exchange. Sales: Mines, 45,250 shares; Prospects, 55,100 shares; grand total, 100,350 shares.

SAN FRANCISCO, CAL.†

NAME OF COMPANY.	Location.	Par. value.	June 17.	June 18.	June 20.	June 21.	June 22.	June 23
Alpha Con.	Nev.	100	02	.02	02	.02	01	.....
Alta.....	"	100	.....	.04	.04	.04	.04	04
Andes.....	"	100	.....	.04	06	.....	.04	.03
Belcher.....	"	100	05	05	.04	.04	.04	05
Best & Belcher...	"	100	.14	.14	.13	.14	.15	.17
Bullion.....	"	100	.02	.02	.02	02	.02	.02
Caledonia	"	100	.16	.18	.17	.15	.16	16
Challenge Con.....	"	100	.....	.16	13	13	.13	.14
Chollar.....	"	100	.....	.06	.06	.05	05	06
Confidence.....	"	100	.....	.....	31	.....	25	30
Con. California & Virginia..	"	100	.30	.26	.24	25	.24	.24
Cons. Imperial.....	"	100	.....	.....	.....	.....	.....	.....
Cons. New York.....	"	100	.....	.....	.....	.....	.....	.....
Crown Point	"	100	.07	.06	.07	.06	05	.05
Exchequer.....	"	100	.....	.....	.01	.....	.....	.....
Gould & Curry..	"	100	.06	.08	.08	.09	09	09
Hale & Norcross ..	"	100	.70	.72	.74	.65	60	.....
Justice.....	"	100	.....	.....	.02	02	.02	.05
Kentuck Con	"	100	.04	04	.05	.....	.04	.....
Lady Wash. Con	"	100	.....	.....	.....	.....	.....	.....
Mexican.....	"	100	.10	09	10	.10	11	.11
Occidental Con....	"	100	.61	60	.60	60	60	.60
Ophir.....	"	100	.20	.22	.20	.20	21	.21
Overman	"	100	.05	.05	.03	.05	05	.05
Potosi.....	"	100	08	08	.08	.06	06	.05
Savage	"	100	04	04	.04	04	.04	.04
Scorpion	"	100	.....	.....	.....	.01	.....	.....
Sierra Nevada.....	"	100	.55	51	52	.53	54	.53
Silver Hill.....	"	100	.....	.....	.....	.....	03	.....
Standard.....	Cal.	100	1 50	1.60	1.50	1 50	1.65	1.65
Union Con.....	Nev.	100	.25	.....	13	.14	15	16
Utah Con.....	"	100	.42	.....	03	.03	03	.02
Yellow Jacket.....		100	17	.17	15	.15	15	15

† Official telegraphic quotations, San Francisco Stock Exchange

ROSSLAND, BRITISH COLUMBIA.*

June 16.

NAME OF COMPANY.	No. of shares.	Par value	Selling price.
Big Chief.	1,000,000	$1	.....
Big Three.....	3,500,000	1	.....
Blue Bird	600,000	1	.....
Brandon & Gold. Cr..	1,5 0,000	1	$0 25
Brit. Amer. Corp'at'n	7,500,000	5	.....
Brit. Col. Corporation	1,500,000	2½	7.00
Butte	1,000,000	1	.....
California.....	2,500,000	1	.....
Canadian Gold Fields	10,000,000	10	.10
Cariboo.....	300,000	1	.55
Commander.....	3 0,000	1	.....
Deer Park..	1,000,000	1	.15
Dundee.....	1,000,000	1	.65
Evening Star.....	1,000,000	1	.....
Fern	200,000	¼	.80
Giant.....	2,750,000	1	.....
Golden Drip	500,000	1	.....
Gold Fields of B.C...	3,000,000	3⅜	3.00
Great Western....	1,000,000	1	.....
Hall Mines	250,0 0	5	7.50
Hattie Brown.....	1,000,000	1	.....
Homestake.....	1,000,000	1	.....
Iron Colt.....	1,0 0,000	1	.....
Iron Horse.....	1,000,000	1	.....
Iron Mask.....	500,000	1	.85
Ivanhoe.....	1,000,000	1	.....
Josie.....	700,000	1	.30
Jumbo.....	500,000	1	.....
Kenneth.....	1,000,000	1	.25
Keystone.....	1,500,000	1	.25

NAME OF COMPANY.	No. of shares.	Par value	Selling price.
KootenayGold Fields	20,000	$5	$3 75
Lerwick..	1,500,0 0	1	15
Lily May..	1,000,000	1	.20
Lon.&Van.Fin.Dev.Co	500,000	5	2 50
London B. C. Gold F..	1,000,000	5	5 12
Monte Cristo	1,000,000	1	.37
Morning Star.....	1,000,000	1	.....
New Gold Fields, B.C.	1,250,000	1	6 00
Noble Five Con.....	1,200,000	1	.17
Novelty	1,000,000	1	.....
Queen Bess Property.	600,000	5	5 12
Rambler Car.. ...	1,000,000	1	.12
Reco.....	1,200,000	1	1 60
Red Eagle...	1,000,000	1	.....
Red Mt.View	1,000,000	1	.....
St. Elmo..	1,000,000	1	.....
St. Paul..	1,000,000	1	.....
Sarah Lee.....	1,000,000	1	.25
Silver Bell..	1,000,000	1	.....
Silverine.....	1,500,000	1	.....
Silver Queen ...	1,250,000	1	.20
Slocan Star.	500 000	1	2.40
Vic Tr. MinesDev. Co.	125,000	5	2.50
Virginia	500,000	1	35
War Eagle Con.....	2,000,000	1	2.10
Waverly Mines.....	100,000	5	2.50
White Bear.	2,000,000	1	.....
Wild Horse G. M. Co., Ltd.	400,000	1	.20
Yale...	1,000,000	1	.....

* From Our Special Correspondent.

SHANGHAI, CHINA.‡

May 16.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad....	China.....	45,000	$5	$5	Oct.. 1894..	$0.25	Taels 1.46
Punjom Mg., Ltd. ...	"	59,349	4	4	Jan. 1897..	.20	" 4.02
do. pref	"	30,000	1	1	" " ..	.50⅜	" 1.31
Raub A'lian G. Mg...	"	200,000	£1	18s. 10d.	June, 1896.	.22	" 22 08
Sheridan Con. M.& M.	Colorado, U.S	20,000	Taels 100	Taels 100	.....	.....	" 2.50

‡ Special Report of J. P. Bissett & Co. The prices quoted are in Shanghai taels.

SALT LAKE CITY, UTAH.*

June 18.

STOCKS.†	No. of shares	Par val.	Bid.	Asked.	STOCKS.†	No of shares.	Par val.	Bid.	Asked.
Ajax.....	300,000	$10	$0.30	$0.36	Homestake.....	400,000	$1	$0.02¾	$0 02¾
Alice.....	400,000	25	.80	1.00	Horn Silver.	400,000	25	1 27½	1 60
Anchor.....	150,000	10	.25	1 00	Little Pittsburg..	400,000	5	.02¾	.03¾
Bogan.....	125,000	10	.....	.....	Lower Mammoth	150,000	1	.....	.....
‡Brick Con.....	500,000	1	.....	.70	Lucky Bill.....	120,000	2½	.....	.02
Buckeye.....	500 000	1	.....	.02	Malvern.....	600,000	2½	.....	35
Bullion-Beck & Ch.	100,000	10	5.50	6.50	Mammoth.....	400,000	5	1.90	2.00
Centennial Eureka	30,000	50	$1.00	$8 00	Mercur.....	200,000	25	7 35	7.40
Chloride Point..	500,000	1	.91	1.00	Northern Light..	400,000	5	03¾	04
Dalton.....	500,000	5	.00¾	.00⅝	Omaha.....	300.000	2	.25	35
Dalton & Lark.....	2,500,000	1	.06	.10	Ontario.....	150,000	100	3.85	4.25
Daly.....	150,000	20	.62½	90	Overland	400,000	5	90	.....
Daly West.....	75,000	20	3.00	4.50	Richmond-An. ..	500,000	1	.02¾	.03¾
‖Dexter.	200,000	5	1.06	1.10	Sacramento	1,000,000	5	.65	66
Eagle.....	150,000	1	.04¾	.06	Silver King.	150,000	20	19.75	20.00
Emerald.....	300,000	1	.02	.06	Sunbeam.....	250,000	1	.16¾	.17⅜
Four Aces.....	250,000	1	.07¾	.09¾	Sunshine.....	250,000	10	21	25
Galena.....	100,000	10	.52⅜	.54	Swansea.....	100,0 0	5	2.25	2.30
Geyser-Marion.....	300,000	5	.77	.80	South Swansea..	150,000	1	1.20	1 24
Grand Central	250,000	1	7 10	7.25	Utah.....	100,000	10	.47	.53

*From Our Special Correspondent. † Utah companies. ‡ Mines in Vanderbilt, Cal. ‖ Mines in Tuscarora, Nev.

HELENA, MONT.*

June 17.

NAME OF COMPANY.	Location.	Company's office.	Par value.	Bid.	Asked.	Shares sold.	Price.
Am. Dev. & M .	Idaho & Mont.	St. Paul, Minn., &Glb'ville,Id.	$5	.....	$1.00	.....	.....
Bald Butte.....	L. & Cl'ke Co.	Helena, Mont.	1	$2 00	2 50	550	$2.00
Bi-Metallic.....	Granite "	St. Louis, Mo.	5	.....	.....	.....	.....
Con.T.&P'rm'n	Cœur d'Alene,Id	Burke, Id.	5	50	.60	1,000	.45
Gold Mountain,	Ruby, Mont.	.....	.....	1.15	1.25	15,000	.....
Helena & Frisco	Cœur d'Alene	London.	5	7.00	7 50	100	8 00
Iron Mountain.	Missoula, Mont	Helena, Mont.	5	.....	.10	116,000	.....
Judge.....	Meagher Co."	" "	.....	.08	.10	.....	.....
Merrill (Gold)..	Jefferson " "	Butte "	1	.....	.....	.....	.....
Ontario..	DeerLodge" "	Helena "	1	.....	.....	.....	.....
Yellowstone....	Meagher " "	" "	5	.05	.07½	7,500	.05 to .07

* Special Report of Samuel K. Davis. Total shares sold, 2,600.

TORONTO CAN.

NAME OF COMPANY.	Par val.	June 16 B.	June 16 A.	June 17 B.	June 17 A.	June 18. B.	June 18. A.	June 20. B.	June 20. A.	June 21. B.	June 21. A.	June 22. B.	June 22. A.	Sales
Ontario														
Hamm'd R	$1	.16	.20	.17⅜	.20	17¾	.21	.17⅜	.20	17⅜	.21	.16	.20	1,000
Hiawatha	1	.30	.32	30	32	.30	.32	.30	.32	.30	.32	.32	35	.....
British Col.:														
Athabaska.	1	.26½	.35	26	.30	.26	.32	26½	.35	26	.32	.	.32	1,500
Big Three .	1	.07⅜	.10	07⅜	.10	.08¾	10	.08¾	.10	08¾	.10	.09	.10¾	4,250
Cariboo. ...	1	.53	.56	.51	56	.52⅜	.58	.53¾	.56	.51	.56	.....	.60	5,500
Deer Park .	1	17	.19	.17	.18	.17	.17½	.16	.18	17	.19	.17	.19	81,800
Good Hope.	1	.02¾	.05	.02½	03¼	.03¼	.06	.04¾	04¾	03¾	.05	.03	05	1,500
Iron Mask .	1	.80	92	.....	.88	.78	85	.78	80	.78	79	...	80	1,500
Kelly Creek	0.10	.....	.04	.....	.03½	.....	.04½	.....	03¾	.....	.03¾	.....	03¾	.850
Minnehaha.	1	.. ..	.16	.....	.16	.14	.16	.....	.17	.....	.17	.....	17	13,450
Monte Crist	1	.35	.38	.35¾	.38	.35¾	.37	.34½	36¾	.34	.37	.33	34¼	41,900
Mont.Red M	1	.....	.15	.15	.19	.16	.18¾	.15½	18	.15	.16	.16¾	.19	350
North. Belle	5	03¾	04	.03	04	.....	04	03	04	.03	04	.03	.04	.....
Poorman.	1	.10	12¾	.09½	11	.....	...	09½	.11	.. ..	.....	.10	11	2 0
Slocan-Car .	0.10	.....	10	.....	10	.....	10	.....	.10	.....	.10	.....	10	1,750
Smuggler,g.	1	.13	.16	.....	17	.13¾	14	13	.15	.13¾	.14	.13¾	14¾	4,300
Van Anda	1	03¾	.06	03¾	.06	.03¾	.06	C3	06	..	.10	03¾	.06	.....
Vic.Tri'mph	1	.06	10	06	10	.06¾	.10	.06	10	.07	12¾	08¾	.12¾	200
War Eagle.	1	2 05	2 10	2.21	2 28	2 23	2.27	2 35	2.40	2 30	2 33	2 34½	2 36	2,000
White Bear.	1	.06¾	.10	.06	.10	.06¾	.08¾	.07	.09	.07¾	.10	.07¾	.08¾	16,930
Wincnester	0 25	.10	.15	.....	.....	.10	.15	.....	... ..	.11¾	.16	.10	15	.....
Develop Co:														
B.C. Gold F.	1	.....	.06	.....	.....	.05	.06	.....	.06	.....	.05	.....	.05	.....
Gold Hills..	1	.....	.10	.....	.10	... ..	.10	.....	.10	.....	.10	.....	.10	1,050
Jubilee	0 10	.....	.10	.....	.....	.....	.....	.....	.10	.....	.....	.....	.10	.....
Ontario G F	1	... .	05	.....	.05	.....	05	... .	.05	.....	05	... .	.05	500

Total sales, 411,550.

MEXICO.

June 11.

NAME OF COMPANY.	No. of shares.	Last div'd.	Prices. Op'g	Prices. Cl'g.
Chihuahua:				
Gloria.....	1,500	.....	$100	$60
Durango:				
Barradon y Cab....	2,400	.....	200	250
Candelaria de Pan.	1,200	.....	20	20
Capuzuya.....	2,400	.....	120	100
Penoles.....	2,000	30 00	2,000	2,000
Restauradora	10,000	.....	3)	3
Rosario y Anexas.	4,800	.. ....	40	40
Guanajuato:				
Angustias.....	2,400	10.00	400	400
Cinco Senores y An	2,000	15.00	500	550
El Oro	500	.....	30	30
do. pref.	2,000	.....	30	30
Guadalupe	10,000	4.00	200	200
Trinidad, aviador .	2,000	...	60	50
do. aviado.	400	... ...	40	50
Zona Minera de Paz	2,400	... .	50	40
Hidalgo:				
Amistad y Concord.	9,600	0.98	24	20
Arevalo	720	. ....	200	200
Bartolome de Med.	2,000	3.00	80	90
Carmen.....	1,100	7.75	350	400
Luz de Maravillas..	1,000	.....	200	180
Pabellon.....	1,000	27.99	50	60

NAME OF COMPANY.	No. of shares.	Last div'd	Prices. Op'g	Prices. Cl'g
Hidalgo:				
Real del Monte..	2,354	10 00	90	8
San Francisco....	6,000	2.00	25	2
San Rafael y An	1,200	12.00	1,000	1,050
do aviado	1,200	8.00	500	520
do. del Oro.....	3,000	.....	20	20
Soledad.....	940	5 00	48	500
Sorpresa..... .	960	5 00	270	300
Union.	2,400	4.00	250	280
Mexico:				
Coronas	500	... ..	75	75
Esperanza y An..	3,000	10 00	1 500	1,500
Michoacan				
Luz de Borda ava	3,000	.....	20	30
do aviado.....	1,000	.... ..	30	20
Pueblo:				
Tlanzingo	2,400		27	40
S. Luis Potosi:				
Concep. y An. .	3,000	... ..	140	150
Sta.MariadelaPaz	2,400	10 00	710	690
Zacatecas:				
Asturiana y An	2,500	10.00	200	150
Cabezon	2,400	.....	30	30
Candelar.de Pino	2,400	.....	10	85
Palma de Somb..	2 4 0	.....	100	100

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100. Prices are in Mexican dollars.

VALPARAISO, CHILE.‡

May 7.

NAME OF COMPANY.	Location.	Capital paid.	Sh.Val. paid up.	Last Div'nd. Amt.	Last Div'nd. Date.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat, silver	Chile .	$3,300,000	$100	12 p. c.	1896	$13¾	$15	$14
Caracoles, silver	" ...	315,000	100	10 "	1894	... ..	.....	.....
Huantajaya (mine) silver	"	1,000,000	100	13 "	1894	2	3	2¾
Huanchaca, silver.....	Bolivia,.	5,000,000	25	8 "	1895	30	31	31
Oruro, silver.....	Chile...	800,000	200	.....	.....	170	2 0	170
Todos Santos, silver.....	"	2,000,000	100	1 "	1895	5	6	7
Agua Santa nitrate.....	"	3,000,000	50	4 "	1897	100	105	105
Antofagasta, nitrate.....	"	2,000,000	200	3 "	1898	80	83	82
Soc. Internacional,nitrate	"	1,600,000	60	.....	.....	3	....	3
Union, nitrate.....	"	2,400,000	160	.....	.....	35	36	35

‡ Special Report of Jackson Bros. Values are in Chilean pesos or dollars.

STOCK QUOTATIONS.

LONDON.

June 10.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
			£ s. d	s.d.		£ s. d	£ s. d
Alaska-Mexican, g	Alaska	£200,000	1 0 0	0 4.8	Apr., 1898	1 2 6	1 7 6
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	"	4 15 0	5 0 0
Anaconda, c., g	Montana	6,000,000	5 0 0	5 1½	May, "	4 17 6	5 2 6
Arizona, pref.	Arizona	63 6 0	4 0 0	3 6	Feb., 1897	136 6 0	137 6 0
Chiapas, g., s., c	Mexico	252,500	1 0 0			5 0	7 0
Con. Gold Fields	"	300,000	1 0 0			17 6	1 0 0
De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1898	2 6	3 6
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	Sept., 1896	1 3	3 9
Golden Gate, g	California	80,000	1 0 0			1 3	3 9
*Grand Central, g., s	Mexico	250,000	1 0 0	2 0	June, 1893	1 12 6	1 17 6
Hall Mines, c., s	British Col	250,000	1 0 0	1 0	May, 1898	1 2 6	1 5 0
Lillooet F. R. & Car., g	" "	300,000	1 0 0			2 6	7 6
Montana, g., s	Montana	480,000	1 0 0	0 3	May, 1898	8 6	4 6
Mountain Copper	California	240,000	5 2 0	2 6	Mar., 1898	4 12 6	4 17 6
Palmarejo, g., s	Mexico	80,000	1 0 0			1½	4½
Plumas-Eureka, g	California	281,250	4 0 0	0 6	Oct., 1896	2 6	5 0
Richmond, g., s., l	Nevada	270,000	5 0 0	1 0	Dec., "	6 3	8 9
Sierra Buttes, g	California	245,000	4 0 0	0 6	Apr., "	1 3	3 9
Colomb, Hydraulic, g	Colombia	75,000	1 0 0	6	Apr., 1898	8 9	11 3
Copiapo, c	Chile	200,000	2 0 0	2 0	June, 1898	2 7 6	2 12 6
Prontino & Bolivia, g	Colombia	140,000	1 0 0	2 0	Mar., 1898	2 11 3	2 13 9
Ouro Preto	Brazil	100,000	1 0 0			15 0	1 0 0
St. John del Rey, g	"	600,000	1 0 0	0 6	Mar., 1898	19 6	1 6 6
Tolima A., s., g	Colombia	70,000	5 0 0	5 0	July, 1897	2 1 0	3 5 0
Tolima B., s., g	"	80,000	5 0 0	5 0	"	1 10 0	2 0 0
Utah Con., g	Utah	3 0,00	1 0 0	rts.	Mar., 1898	2 12 6	2 17 6
Mason & Barry, c., sul	Portugal	630,000	3 0 0	4 0	May, 1898	3 2 6	3 7 6
Rio Tinto, c	Spain	1,625,000	5 0 0	£1	1898	26 0 0	26 2 6
" " pref	"	1,625,000	5 0 0	2 6	" 1898	6 0 0	6 2 6
Tharsis, c	"	1,350,000	2 0 0	10 0	" 1898	6 2 6	6 7 6
Assoc. Gold Mines	W. Australia	5 0,000	1 0 0	2 0	July, 1897	3 6	3 18 9
Broken Hill Prop., s	N.S.Wales	384,000	8 0	1 6	Apr., 1898	2 2 6	2 5 0
Great Boulder, Prop	W. Australia	1,750,000	2 0	6	May, 1898	18 6	19 0
Hannan's Brownhill, g	"	110,000	1 0 0	5 0	Jan., 1898	8 7 6	8 10 0
Harquahala	"	300,000	1 0 0	6 0	Nov., 1894	9	1 3
Ivanhoe Gold Corp	"	140,000	5 0 0			6 7 6	6 10 0
Kalgurlie, g	"	120,000	1 0 0			6 2 6	6 5 0
*Lake View Consols, g	"	250,000	1 0 0	16 0	Apr., 1898	9 3 9	9 6 3
Mt. Lyell Mg. & R., l., c	Tasmania	900,000	3 0 0	4 0	July, 1898	9 17 6	10 2 6
*Mt. Morgan, g	Queensland	1,000,000	1 0 0	6	June, 1898	4 8 9	4 11 3
*Waihi, g	New Zealand	160,000	1 0 0	2 0	" 1898	4 8 9	4 11 3
West Aust. Jt. Stk. Trust	W. Australia	250,000	1 10 0	1 0	Apr., 1898	13 9	16 3
Champion Reef, g	Colar Fields	220,000		3 6	May, 1898	4 16 3	4 18 9
Coromandel, g	"	120,000	1 10 0	3 0	Jan., 1898	2 12 6	2 15 0
Mysore Gold, g	"	250,000	1 0 0	4 6	Mar., 1898	5 7 6	5 10 0
Nundydroog, g	"	220,000	1 0 0	3 0	" 1898	3 17 6	4 0 0
Ooregum, g	"	145,000	1 0 0	1 0	Apr., 1898	3 3 9	3 6 3
" pref., g	"	120,000	1 0 0	1 0	" 1898	3 13 9	3 16 3
Angelo, g	Transvaal	275,000	1 0 0	5 0	" 1898	5 2 6	5 5 0
*Bonanza, g	"	200,000	1 0 0	10 0	June, 1898	3 16 3	3 18 9
British S. Af., chartered	So. Africa	3,500,000	1 0 0	rts.	Apr., 1898	2 6 3	2 8 9
†Cape Copper, c	"	600,000	2 0 0	6 6	Jan., 1898	4 10 0	4 15 0
" pref	"	150,000	2 0 0	6 6	" 1898	4 12 6	4 17 6
City & Suburban (New), g	Transvaal	1 360,000	4 0 0	8 0	Aug., 1898	5 8 9	5 11 6
Con. Deep Level, g	"	200,000	1 0 0	xb.	Apr., 1898	3 0 0	3 5 0
*Crown Reef, g	"	120,000	1 0 0	£1	June, "	2 10 0	2 15 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Mar., "	26 8 9	26 11 3
Durban Roodepoort, g	Transvaal	135,000	1 0 0	4 0	June, "	6 5 0	6 10 0
Ferreira, g	"	90,000	1 0 0	30 0	Mar., 1898	24 5 0	24 15 0
Geldenhuis Deep, g	"	350,000	1 0 0	6 0	Mar., 1898	7 5 0	7 10 0
Geldenhuis Est., g	"	200,000	1 0 0	0 0	June, 1898	5 13 9	5 16 3
Goldfields Deep, g	"	600,000	1 0 0	rts.	July, 1897	7 5 0	7 10 0
Henry Nourse, g	"	125,000	1 0 0	15 0	Mar., 1898	9 0 0	9 5 0
Heriot (New), g	"	115,000	1 0 0	5 0	Aug., 1898	7 2 6	7 7 6
*Jagersfontein, d	Orange Fr. St	1,000,000	5 0 0	6 0	Mar., 1898	6 15 0	7 0 0
Johannesburg Con. Invst	So. Africa	2,750,000	1 0 0	2 0	Aug., "	1 3 9	1 6 3
*Jubilee, g	Transvaal	50,000	1 0 0	5 0	May, 1898	9 5 0	9 10 0
Jumpers, g	"	100,000	1 0 0	7 0	Mar., "	4 15 0	5 0 0
Kleinfontein, g	"	250,250	1 0 0	rts.	Sept., 1896	2 3 9	2 6 3
Langlaagte Estates, g	"	300,000	1 0 0	3 0	Mar., 1898	2 17 6	3 2 6
May Con. (New), g	"	275,000	1 0 0	2 0	Jan., 1897	2 6 3	2 8 9
Meyer & Charlton, g	"	85,000	1 0 0	6 0	Mar., 1898	3 15 0	4 0 0
Namaqua, c	Cape Colony	200,000	2 0 0	2 0	Dec., 1896	2 12 6	2 15 0
Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Feb., 1898	3 6 3	3 8 9
Rand Mines, g	So. Africa	400,000	1 0 0			28 17 6	29 2 6
Robinson, g	Transvaal	2,750,000	5 0 0	8 0	Mar., 1898	7 17 6	8 2 6
Sheba, g	"	1,100,000	1 0 0	1 0	Jan., 1898	1 13 9	1 16 3
Stm. & Jack Prop., g	"	5,000,000	5 0 0	2 0	Aug., 1896	3 6 3	3 8 9
Wemmer, g	"	80,000	1 0 0	15 0	May, 1898	9 17 6	10 2 6
Wentworth, g., s	New So. Wales	500,000	1 0 0	1 0	Apr., 1896	7 6	10 0
Wolhuter, g	Transvaal	880,000	4 0 0	6 0	Aug., 1897	5 5	5 10 0

* Ex-dividend. † Dividend pending.

PARIS.

June 9

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning	Prices. Closing.
			Francs.	Fr.	Fr	Fr.	Fr
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	80.00	2,090 00	2, 99.00
" " Firminy	"	" "	3,000,000	500	85.00	2,340.00	2,450.00
" " Fives-Lille	"	" "	12,000,000	500	85.00	790.0	790.00
" " Huta-Bank	Russia	Iron & steel		500		4,0 .00	4,200 00
" " la Marine	France	Steel mfrs	20,000,00	500	40.00	1,392.50	1,475.00
" " Longwy	"	" "		500	35.00	900.00	9 4.00
Anzin	"	Coal		17	190.00	5,5 0.00	5,500.00
Blache-St. Vaast	"	Steel				3,8 0.00	3,800.00
Boleo	Lower Cal	Copper		1,000	160 00	2,040.00	2,030.00
Briansk	Russia	Coal & Iron		500	93.50	2,040.00	1,365.00
Bruay	France	Coal	3,000,00	500		375.00	1,365.00
Cape Copper	S. Africa	Copper	15,000,000	400	800 00	35,000.00	35,500.00
Champ d'Or	"	Gold	3,375,00	50	1.50	119. 0	120.0 0
Courrieres	France	Coal	800, 00	25		31 5	28 00
De Beers Consolidated	S. Africa	Diamonds	98,750,00	800	160.00	1,950.00	1,995.00
Denain-Anzin	France	Steel		125	15.63	685.00	689 50
Dombrowa	Russia	Coal		500	20.00	745.00	750.00
Donetz	"	Steel		500	12.50	661.00	72 .00
Dourges	"	Coal				1,047.50	1,031.50
Dynamite Centrale	France	Explosives		1,000	250.00	13,475.00	14,000.00
Epinac	"	Coal		500	12.50	455.00	458.00
Escombrera-Bleyberg	Spain	Lead		2,500	30.83	6 0.00	600.00
Fraser River	Brit. Col'mb	Gold	250,0 0	500	35.00	950. 0	1,025.00
Huanchaca	Bolivia	Silver	40,0 0,00	25		47.75	47.50
Langlaagte Estate	S. Africa	Gold	11,750,000	125	5.00	59.00	59.25
Lavunas	Chile	Nitrates		25	11.25	80.00	77.00
Laurium	Greece	Zinc & lead	16,800,000	125	12.5.	39.00	3 .00
Lautaro	Chile	Nitrates		500	40.00	645.00	658 00
Malfidano	Italy	Zinc	12,500,000	125		1 0.00	110.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,00	500	40.50	1,089.00	1,020.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	12.00	645.00	647.50
Napthe Baku	Russia	Petroleum		500	40.00	945.00	955.00
Napthe, Le	"	"				592.00	592.50
Napthe Nobel	"	"				2,700.0	2,700.00
" parts	"	"				408.00	4 5.00
Nickel	N. Caled'nia	Nickel	6,360,000	500	30.00	8,100.00	7,950 00
Paccha-Jazpampa	Chile	Nitrates				255. 0	269.00
Penarroya	Spain	Coal, etc		500	65.00	12 00	12 50
Rebecca	Colo'do, U.S.	Gold		25		2,200.00	2,175.00
Rio Tinto,	Spain	Copper	40,625,000	125	47.70	4.00	4.50
" preferred	"	"	40,625,000	125		662.0	66 .00
Rive-de-Gier	France	Coal				153. 0	154.00
Robinson	S. Africa	Gold	68,750,000	125	12.50	25.00	22.00
St. Etienne	France	Coal			17.00	203 5	2 0.00
Salines de l'Est	France	Salt		500	11.5	438 0	440.00
Salines du Midi	France	etc		5 0	20.00	225.0	287 50
Sels Gem. de la Rus. Mer	Russia	" etc		500	25.00	865.00	905.00
Tharsis	Spain	Copper	33,750,000	50	8.75	475.00	445 00
Vicoigne-Neux	France	Coal		1,000	700 00	183.00	162.50
Vielle Montagne	Belgium	Zinc	9,000,000	80	20.00	22,350.00	22,160.00
						655.00	65 .00

MEETINGS.

NAME OF COMPANY.	Location.	Meeting.	Date.	Place.
Anaconda	Montana	Annual.	July 13.	Anaconda, Mont.
Bangkok-Cora Beli	Colorado	"	Aug. 6.	Denver, Colo.
Be t & Belcher	Nevada	"	July 2.	309 Montgomery Street, San Francisco, Cal.
Calumet & Hecla	Michigan	"	Aug. 18	Boston, Mass.
Centennial	Michigan	"	July 13	60 State Street, Boston, Mass.
Con. Nigothrawk & Nightngale	Colorado	"	June 29	1535 Eighteenth Street, Denver, Colo.
Galena	Utah	"	July 28.	Salt Lake City, Utah.
Morgan	Utah	"	Aug. 30	Salt Lake City, Utah.
Parrot	Montana	"	June 29	Butte, Mont.
Small Hopes	Colorado	"	" 28.	No Broadway, New York City.
Union Con	Nevada	"	July 19	309 Montgomery Street, San Francisco, Cal.
Yellow Jacket	Nevada	"	" 20	Gold Hill, Nev.

DIVIDENDS.

NAME OF COMPANY.	Current dividends. Date.	Current dividends. Am't.	Paid since Jan. 1, 1898.	Total to date.
Ætna Con	July 1	$10,000	$20,000	$140,000
Alaska-Mexican			54 000	281,031
Alaska-Treadwell			225,000	3,475,000
Alice, Mont			20 000	1,075,000
American Gold			6,000	291 000
*Anchoria-Leland	Jun.15	6,000	36,000	138,000
*Anaconda Copper			1,500,000	6,750,000
*Argonaut			40,000	80,000
Atlantic			40,000	780,000
*Big Six			5,000	15,000
*Boston&Montana			450,000	7,625,000
*Bull.-Beck&Ch'n	Jun.15	10,000	30,000	2,147,000
*Bunker Hill & S	Jun. 4	21,000	102,000	474,000
Calumet & Hecla	Jun.30	1,000,000	3,000,000	53,850,000
Central Lead			16,000	40,000
Champion			25,500	296,200
*Colorado Sm			150,000	1,545,000
Crowned K., Ariz.	June 7	12,000	72,000	148,000
*Deadwood-Terra			30,000	1,350,000
*De Lamar			115,200	2,451,600
Dutch			10,000	32,500
*Elkton, Con	Jun.20	20,000	134,000	556,961
El Paso Gold			6,500	12,093
*Geyser Marion			21,000	84,000
*Gold Coin, Vict	Jun.25	10,000	60,000	80,000
*Golden Cycle	Jun.18	5,000	25,000	150,000
Golden Reward			15,000	155,000
Grand Central, Ut	Jun.15	31 250	31,250	31,250
*Highland	Jun.21	20,000	120 00	3,664 718
Hope of St. Louis			20,000	762 252
*Holy Terror	June 1	9 000	54,000	90,000
*Homestake	Jun.25	62,500	281,250	6,806 250
Horn Silver	Jun.30	20,000	40,000	5,190,000
Iron Mountain			3,600	501 100
Iowa			5,000	85 000
Jamison			19,500	19,500
*Jersey Leasing			8,000	10,000
Le Roi			150.000	775,000
*Lillie	July 1	10,000	54,000	99,100
Mammoth	June 1	20,000	100 000	1 250,000
*Mercur	Jun.20	25 000	205 000	1,091,000
Minnesota Iron	July15	$247,500	$487,500	$3,735,000
*Modoc	June	15,000	30,000	3 ,000
*Montana, Lt'd			35,64	2,997,557
Mont. Ore Pur			80,0 0	720,000
*Moon-Anchor			75,000	171,0 0
*Morning Star	June	12,000	69,600	666,000
Mt. Rosa			20,000	60,000
Napa Con	July 1	20,000	40,00	930.00
New Idria	July 1	15,000	30,000	60,000
N. Y. & Hond. R			60,000	915,000
Orphan Belle			115,125	115,125
Osceola	Jun.30	50,000	50,000	2,272,500
Parrot	July 1	68,955	275,910	2,000,898
*Pennsylvania	June	2,575	15,450	38,775
*Pioneer			25,000	25,000
*Portland	Jun.15	45,000	225,000	1,492,,89
Quincy			300,000	9,750,000
Raven			20,000	20,000
Reco, B. C			100,000	287,500
Reward, Cal			1,200	1,200
Ruth, B. C			75,000	75,000
*Sacramento	Jun.28	5,000	30,000	52,000
Santa Rosalia			10,000	125,000
Seventy Six			2,950	2,950
*Silver King	Jun.10	37,500	225,000	1,575,000
Small Hopes	Jun.18	25,000	25,000	3,000,000
Smuggler	Jun.15	10,000	10,000	975,000
*So. Eureka, Cal			12,000	12,000
*South Swansea	June	7,500	22,500	97,450
St. Joseph Lead			37,500	2,709,500
Standard Con			17,0 0	5,654,940
*Strong			125,000	395,000
*Swansea	Jun 10	5,000	30,000	101 500
Tamarack	" 30	200,000	200,000	5,3 0,000
Victor	July 1	100,000	150 000	955.000
Vindicator			37,500	37 500
War Eagle, B. C	Jun.15	7,500	7,5 0	194,500
West. Mine, Ent			10,000	48,680
Whitewater, B.C			70,000	194,000
Totals		$2 165,280	$ 9,980,675	15,342,079

* May dividend paid.

ASSESSMENTS.

NAME OF COMPANY.	Location.	No.	Delinq.	Sale.	Amt
Arrastraville	Cal	1	June 11	July 5	.10
*Belcher	Nev	58	July 12	Aug. 2	.10
*Buckeye	Utah		" 27	" 12	.00½
Buchanan	"	20	June 19	July 12	.25
Chollar	Nev	46	July 12	Aug. 4	.15
Cleveland Con	Utah		June 13	July 14	.02
Columbia	"		"		.00¾
*Con. St. Gothard	Cal	14	July 23	Aug. 10	.05
*Emerald	Utah		June 15		
*Eureka Con	Cal		July 9		.00½
Goleta	Cal	6	" 25	July 25	.10
*Homestake	Utah		June 15		
*Hale & Norcross (Fox board)	Nev		July 12	July 29	.10
*Junction	Cal	19	" 11		.03
Laird	"	1	June 25	July 25	.10
*Las Lurete	"	10	July 9		.02½
Leon	"	1	" 25	" 25	.01½
Lucky Bill	"		" 18	" 12	.01½
*Maxfield	"		" 8	" 25	.06
Mayflower Grav	Cal		" 2		.05
Montecito	"	5	June 25	July 25	.10
*Nancy Hanks	"		July 18		.00½
National Con	"	3	June 27	" 23	.05
*Northern Light	Utah		July 12	" 28	.10
No. Mercur	"		June 24	" 12	.01
Opohongo	"		"	" 12	.01
*Potosi	Nev	50	July 20	Aug. 16	.15
Red Cap	Cal	3	June 4	July 7	2.00
Reward	"	6	July 6	" 29	.02
Savage	Nev	95	" 5		.10
Sterling	Cal	5	June 25	July 25	.15
Sunbeam Con	Utah	18	" 14	" 2	.01
*Thorpe	Cal	10	July 18	Aug. 8	.02½
Union Con	Nev	56	June 13	July 1	.15

* New assessment.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Adams, s. l. c.	Colo.	$1,500,000	150,000	$10	*				$693,500	Oct.	1895	.04
2	Ætna Cons., q.	Cal.	500,000	100,000	5	*				130,000	Mar.	1898	.10
3	Alaska-Mexican, g.	Alask	1,000,000	200,000	5					281,031	April.	1898	.10
4	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	*				3,475,000	April.	1898	.37½
5	Alice, g. s.	Mont.	10,000,000	400,000	25	*				1,075,000	April.	1898	.05
6	American Gold, g. s. l.	Colo.	3,000,000	300,000	10	*				291,000	Mar.	1898	.02
7	Anaconda Copper	Mont.	30,000,000	1,200,000	25					6,750,000	May.	1898	1.25
8	Anchoria-Leland, g.	Colo.	600,000	600,000	1	*				132,000	May.	1898	.01
9	Argentum Juniata, g.s.l	Colo.	2,600,000	1,300,000	2	*				39,000	July.	1895	.03
10	Atlantic, c.	Mich.	1,000,000	40,000	25					780,000	Feb.	1898	1.00
11	Aurora, l.	Mich.	2,500,000	100,000	25	*				700,000	April.	1896	.50
12	Bald Butte	Mont.	250,000	250,000	1	*				512,500	Sept.	1897	.03
13	Bangkok-Cora Bell, s. l.	Colo.	600,000	600,000	1					107,510	July.	1896	.01
14	Belden, F. E., m.	N. H.	500,000	100,000	5	*				217,000	Jan.	1898	.04
15	Big Six, g. s.	Colo.	500,000	500,000	1					15,000	May.	1898	.00½
16	Bi-Metallic, g. s.	Mont.	5,000,000	200,000	25	*				1,630,000	June.	1893	.10
17	Boston & M. Cons., g.s.c	Mont.	3,750,000	150,000	25	*				7,625,000	May.	1898	3.00
18	Bullion Beck & Champ.	Utah.	1,000,000	100,000	10	*				2,137,000	May.	1898	.10
19	Bunker Hill & S., s. l.	Idaho	3,000,000	300,000	10					474,000	June.	1898	.07
20	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25					53,850,000	June.	1898	10.00
21	Cariboo	B. C.	800,000	800,000	1					204,965	May.	1898	.02
22	Centen'l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar.	1889	1.00	2,010,000	Mar.	1897	1.00
23	Central Lead, l.	Mo.	400,000	4,000	100	*				40,000	April.	1898	1.00
24	Champion, g. s.	Cal.	340,000	34,000	10					296,200	April.	1898	.25
25	Charleston, p. r.	S. C.	1,000,000	10,000	100	*				150,000	Feb.	1897	1.00
26	C. O. D., g.	Colo.	500,000	500,000	1	*				25,000	Mar.	1896	.01
27	Colorado, Sm., g. s. c.	Mont.	1,000,000	100,000	10	*				1,545,000	May.	1898	.50
28	‡Cons. Cal. & Va., g. s.	Nev.	21,600,000	216,000	100	5,156,130	Apr.	1898	.25	3,898,800	Feb.	1895	.25
29	Coptis, g. s.	Nev.	10,000,000	100,000	100					77,000	Feb.	1895	.01
30	Crowned King, g. c. l.	Ariz.	6,000,000	600,000	10	*				136,000	May.	1898	.02
31	Dalton & Lark, s. l.	Utah.	2,500,000	2,500,000	1					87,500	Aug.	1896	.00½
32	Daly, s. l.	Utah.	3,000,000	150,000	20					2,925,000	Mar.	1897	.25
33	†Deadwood-Terra, g.	S. D.	5,000,000	200,000	25	*				1,350,000	May.	1898	.15
34	De Lamar, g. s.	Idaho	2,000,000	400,000	5	*				2,451,600	May.	1898	.29
35	Della S.	Colo.	1,000,000	1,000,000	1					60,000	Jan.	1897	.10
36	Doe Run, l.	Mo.	500,000	5,000	100						May.	1898	.50
37	Elkhorn, s.	Mont.	1,000,000	200,000	5					1,212,000	June.	1865	.06
38	Elkton Cons., g.	Colo.	1,250,000	1,250,000	1					536,961	May.	1898	.01½
39	El Paso, g. s.	Colo.	650,000	650,000	1					12,093	Jan.	1898	.01
40	Fern.	B. C.	200,000	200,000	1					10,000	Jan.	1898	.05
41	Florence, s.	Mont.	2,500,000	500,000	5	*				132,530	May	1897	.01
42	Franklin, c.	Mich.	1,000,000	40,000	25					1,240,000	Jan.	1894	2.00
43	Galena, g. s. l.	Utah.	1,000,000	100,000	10					71,000	Jan.	1897	.05
44	Garfield-Grouse, g.	Colo.	1,200,000	1,200,000	1	*				24,000	Feb.	1897	.01
45	Geyser-Marion, g.	Utah.	1,500,000	300,000	5					84,000	May.	1898	.02
46	Gold Coin, g. s.	Colo.	1,000,000	200,000	5	*				160,000	Nov.	1897	.05
47	Gold Coin of Victor, g.	Colo.	1,000,000	1,000,000	1					70,000	May.	1898	.01
48	Golden Cycle	Colo.	1,000,000	200,000	5					145,000	May.	1898	.00½
49	Golden Eagle, g.	Colo.	1,000,000	1,000,000	1	*				10,000	Sept.	1896	.01
50	Golden Fleece, g. s.	Colo.	600,000	600,000	1	*				569,179	Feb.	1897	.01
51	Gold & Globe, g.	Colo.	750,000	750,000	1					51,625	July.	1897	.00⅝
52	Golden Reward, g	S. D.	1,000,000							155,000	Feb.	1898	.15
53	Grand Central, g.	Utah.	250,000	250,000	1					31,250	June.	1898	.12½
54	Hecla Cons., g. s. c. l.	Mont.	1,500,000	30,000	50	*				2,175,000	Feb.	1897	.50
55	Helena & Frisco, s. l.	Idaho	2,500,000	500,000	5	*				475,000	Aug.	1896	.04
56	Highland, g.	S. D.	10,000,000	100,000	100	304,000				3,644,718	May	1898	.20
57	Holy Terror, g.	S. D.	300,000	300 600	1					90,000	June.	1898	.03
58	Homestake, g.	S. D.	12,500,000	125,000	100	200,000	July.	1878	1.00	6,743,750	May	1898	.50
59	Hope of St. Louis, s.	Mont.	1,000,000	100,000	10	*				762,252	Mar.	1898	.10
60	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*				5,190,000	June.	1898	.05
61	Idaho.	B. C.	500,000	500,000	1					264,000	May.	1898	.05
62	Iowa, g.	Colo.	1,000,000	1,000,000	1					85,000	Mar.	1898	.00½
63	Iron Mountain, s. l.	Mont.	5,000,000	500,000	10	*				501,100	Jan.	1898	1.00
64	Isabella, g.	Colo.	2,250,000	2,250,000	1					270,000	June.	1897	.00½
65	Kearsarge, c.	Mich.	1,000,000	40,000	25	190,000	Oct.	1887	1.00	160,000	Aug.	1897	1.00
66	Kennedy, g.	Cal.	10,000,000	100,000	100					1,796,000	Aug.	1898	.48
67	Last Chance, s. l.	B. C.	500,000	500,000	1	*				40,000	Jan.	1897	.04
68	Leadville Cons., s. l.	Colo.	4,000,000	400,000	10	*				316,000	Feb.	1893	.03
69	Le Roi.	B. C.	2,500,000	500,000	5					775,000	April.	1898	.10
70	Lillie, g.	Colo.	1,000,000	1,000,000	1					89,100	May.	1898	.03
71	Maid of Erin, g. s. c. l.	Colo.	3,000,000	600,000	5	*				740,000	Nov.	1895	.02
72	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	*				1,250,000	June.	1898	.05
73	Mayflower Gravel, g.	Cal.	1,200,000	60,000	20					166,897	Dec.	1895	.10
74	May-Mazeppa Con., l. s.	Colo.	1,000,000	1,000,000	1	*				170,000	Oct.	1891	.03¼
75	Mercur, g.	Utah.	5,000,000	200,000	25	*				1,066,000	May.	1898	.18
76	Minnesota Iron, l.	Minn.	16,500,000	165,000	100	*				3,735,000	June.	1898	1.50
77	Mollie Gibson, s.	Colo.	5,000,000	1,000,000	5	20,000	Jan.	1891	.02	4,080,000	Jan.	1895	.05
78	Montana, Ltd., g. s.	Mont.	3,300,000	660,000	5	*				2,997 557	May	1898	.05¾
79	Montana Ore Purchas'g	Mont.	1,000,000	40,000	25	*				720,000	April.	1898	1.00
80	Moon-Anchor, g.	Colo.	600,000	600,000	1	*				171,000	May.	1898	.02½
81	Moose, g.	Colo.	600,000	600,000	1					186,000	Jan.	1896	.01
82	Morning Star, g.	Cal.	240,000	2,400	100	70,800	Feb.	1887	.75	666,600	June.	1898	5.00
83	Mt. Rosa, g.	Colo.	1,000,000	1,000,000	1					60,000	Jan.	1898	.02
84	Napa Cons., q.	Cal.	700,000	100,000	7	*				910,000	Apr.	1898	.20
85	New Elkhorn	Colo.	1,500,000	300,000	5					72,000	Sept.	1896	.24
86	New Idria Quicksilver.	Cal.	500,000	100,000	5					45,000	Mar.	1898	.15
87	N. Y. & Hon Rosario, s. g.	C. A.	1,500,000	150,000	10	*				915,000	May	1898	.10
88	North Star, g.	Cal.	2,000,000	200,000	10	20,000	June.	1885	.02	450,000	June.	1893	.50
89	Nugget, g.	Colo.	1,000,000	1,000,000	1	*				10,000	Jan.	1895	.00½
90	Ontario, s. l.	Utah.	15,000,000	150,000	100					13,557,500	Dec.	1897	.75
91	Osceola, c.	Mich.	1,250,000	50,000	25	*				2,272,500	June.	1898	1.00
92	Pacific Coast Borax, b.	Cal.	2,000,000	20,000	100					422,500	July.	1893	1.00
93	Parrot, c.	Mont.	2,300,000	230,000	10	*				2,000,898	July.	1898	.30
94	Pennsylvania Cons.	Cal.	5,150,000	51,500	100	14,000	Feb.	1892	.05	38,775	June.	1898	.05
95	Pharmacist, g.	Colo.	1,200,000	1,200,000	1					80,000	Jan.	1893	.01
96	Pioneer g.	Cal.	1,000,000	100,000	10					25,000	May	1898	.12½
97	Portland, g.	Colo.	3,000,000	3,000,000	1	*				1,447,080	May.	1898	.01½
98	Princess, g.	Colo.	1,000,000	1,000,000	1					45,000	Feb.	1897	.00½
99	Quincy, c.	Mich.	2,500,000	100,000	25	*				9,770,000	Feb.	1898	3.00
100	Rambler-Cariboo	B. C.	1,000,000	1,000,000	1					40,000	April.	1897	.02
101	Raven, g.	Colo.	1,500,000	1,500,000	1					20,000	Mar.	1898	.01
102	Reco, s. l.	B. C.	1,000,000	1,000,000	1					287,500	Jan.	1898	.10
103	Sacramento, g.	Utah.	5,000,000	1,000,000	5					47,000	May.	1898	.00½
104	St. Joseph, l.	Mo.	2,500,000	250,000	10						Mar.	1898	.15
105	Santa Rosalia, g. s.	Cal.	100,000	100,000	1					125,000	Feb.	1898	.10
106	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	3,000	Jan.	1897	.02	1,575,000	June.	1898	.25
107	Slocan Star.	B. C.	1,000,000	2,000,000	0.50					350,000	Mar.	1897	.05
108	Small Hopes, s.	Colo.	5,000,000	250,000	20	*				3,300,000	June.	1898	.10
109	‖Smuggler Union, g. s.	Colo.	5,000,000	50,000	100					150,000	Oct.	1896	1.00
110	South Swansea, s. l.	Utah.	150,000	150,000	1					89,960	April.	1898	.05
111	§Standard Cons., g. s.	Cal.	20,000,000	200,000	100					5,654,940	Mar.	1898	.10
112	Swansea, s. l.	Utah.	500,000	100,000	5					101,500	June.	1898	.05
113	Tamarack, c.	Mich.	1,500,000	60,000	25					5,330,000	June.	1898	3.00
114	Tomboy, g.	Colo.	2,000,000	200,000	10	*				600,000	Dec.	1896	.10
115	Union, g.	Colo.	1,250,000	1,250,000	1					73,000	June.	1896	.01
116	Union Leasing.	Colo.	500,000	500,000	1					340,000	July.	1895	.04
117	Utah.	Utah.	1,000,000	100,000	10	*				177,000	Dec.	1897	.01
118	Victor, g.	Colo.	1,000,000	200,000	5	*				955,000	June.	1898	.50
119	Vindicator, Cons. g.	Colo.	1,500,000	1,500,000	1					37,500	April.	1898	.02½
120	War Eagle	B. C.	500,000	500,000	1	32,500	Dec.	1894		194,500	June.	1898	.01½
121	Western Mine Enterp.	Mont.	500,000	500,000	1	*				48,680	Jan.	1898	.20
122	Whitewater.	B. C.	625,000	125,000	5					194,000	April.	1898	.32

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Ada Cons., s. l.	Utah.	$100,000	100,000	$1	$3,333	Nov.	1895	.01½
2	Alamo, g. c. l.	Utah.	125,000	125,000	1	937	Mar.	1898	.00¼
3	Alliance, g. s. l.	Utah.	100,000	100,000	1	200,000	Dec.	1895	.10
4	Allonez, c.	Mich.	2,000,000	80,000	25	80,000	June.	1890	1.00
5	Alpha Cons., g. s.	Nev.	10,500,000	105,000	100	274,500	Mar.	1898	.05
6	Alta, s.	Nev.	10,080,000	108,000	100	3,615,760	Jan.	1898	.10
7	American Quartz, g.	Cal.	1,000,000	100,000	10	1,000	Feb.	1897	.01
8	Anchor, g. s. l.	Utah.	1,500,000	150,000	10	560,000	Aug.	1893	.20
9	Andes, g.	Nev.	10,000,000	100,000	100	330,000	Apr.	1898	.05
10	Baliol, g.	Cal.	1,000,000	100,000	10	55,000	Mar.	1898	.30
11	¶Belcher, s. g.	Nev.	10,400,000	104,000	100	1,369,620	Dec.	1897	.20
12	Belle Isle.	Nev.	10,000,000	100,000	100	240,271	July.	1896	.10
13	Best & Belcher, g. s.	Nev.	10,080,000	100,800	100	2,579,506	Apr.	1898	.30
14	Bogan.	Utah.	1,250,000	125,000	10	26,875	Dec.	1897	.01½
15	Brunswick Cons., g.	Cal.	500,000	500,000	1	160,000	July.	1897	.03
16	Bullion, s. g.	Nev.	1,000,000	100,000	100	3,060,000	May.	1898	.05
17	Burlington, g. s.	Cal.	10,000,000	100,000	100	3,000	May.	1896	.03
18	Centennial, c.	Mich.	2,000,000	80,000	25	400,000	Mar.	1898	3.00
19	Central Eureka, g.	Cal.	4,000,000	400,000	10	66,000	Apr.	1898	.01½
20	Challenge Cons, s, g.	Nev.	5,000,000	50,000	100	315 000	May	1898	.10
21	Chollar, g. s	Nev.	11,200,000	112,000	100	2,105,600	July.	1898	.15
22	¶Chrysolite, s. l.	Colo.	10,000,000	200,000	50	*			
23	Cleveland Cliffs, i.	Mich.	5,000,000	50,000	100	*			
24	¶Confidence, g. s.	Nev.	2,496,000	24,960	100	1,651,950	Oct.	1897	.30
25	Cons. Imperial, g. s.	Nev.	5,000,000	50,000	100	2,085,500	Apr.	1898	.01
26	Crown Point, g. s.	Nev.	10,000,000	100,000	100	3,035,000	Mar.	1898	.10
27	Dalton, s. l.	Utah.	2,500,000	500,000	5	5,000	Dec.	1897	.00½
28	Dexter.	Nev.	1,000,000	200,000	5	30,000	Apr.	1898	.15
29	Eagle, g. s.	Cal.	500,000	100,000	5	5,000	Dec.	1896	.05
30	Eagle, g. s.	Ore.	1,000,000	100,000	10	4,500	Dec.	1897	.01½
31	Emerald.	Utah.	300,000	300,000	1	1,000	Dec.	1897	.00½
32	¶Enterprise, g.	Colo.	800,000	800,000	1				
33	¶Eureka Cons., g. s. l.	Nev.	1,000,000	50,000	20	567,500	Feb.	1897	.25
34	Eureka Con. Drift, g.	Cal.	500,000	500,000	1	165,000	Oct.	1897	.03
35	Exchequer, g. s.	Nev.	10,000,000	100,000	100	730,000	Dec.	1897	.05
36	Far West, g. s.	S. D.	1,250,000	250,000	5	42,125	Jan.	1897	.003
37	Favorite, g.	Colo.	1,200,000	1,200,000	1	*			
38	Four Aces.	Utah.	250,000	250,000	1	5,000	Mar.	1898	.01
39	Free Coinage, g.	Colo.	1,000,000	1,000,000	1	*			
40	Gold Belt, g. s.	Utah.	500,000	500,000	1	3,012	July.	1896	.00½
41	Golden Age, g.	Colo.	1,000,000	1,000,000	1	*			
42	Golden Dale, g.	Colo.	2,000,000	2,000,000	1	*			
43	Golden Fleece Grav. g	Cal.	130,000	130	1000	56,260	Mar.	1897	2.00
44	Gold King, g.	Colo.	1,000,000	1,000,000	1	*			
45	¶Gold Rock, g.	Colo.	1,000,000	1,000,000	1	*			
46	Gold Standard, g.	Colo.	1,000,000	1,000,000	1	*			
47	Gould & Curry.	Nev.	10,800,000	108,000	100	4,909,800	Apr	1898	.15
48	¶Hale & Norcross, g.s.	Nev.	11,200,000	112,000	100	5,809,000	Apr.	1898	.10
49	Hidden Treas., g. s.	Cal.	20,000	20,000	1	1,000	Nov.	1893	.05
50	Horse Shoe Bar Cons.	Cal.	6,000,000	60,000	100	76,800	Feb.	1898	.10
51	Idaho Co., Ltd., g.	Idaho	100.000	1,000	100	*			
52	Idlewild, g.	Cal.	1,000,000	100,000	10	*			
53	¶Iron Silver, s.l.	Colo.	10,000,000	500,000	20	*			
54	Jackson, l.	Mich.	300,000	12,000	25	*			
55	Jupiter, g.	Cal.	2,000,000	20,000	100	80,000	Feb.	1898	.20
56	Justice, g. s. c.	Colo.	500,000	500,000	1	*			
57	Kentuck Cons., s.	Nev.	10,500,000	105,000	100	130,000	Dec.	1897	.05
58	Keystone, g.	Colo.	1,500,000	1,500,000	1	*			
59	Lacrosse, g.	Colo.	1,000,000	100,000	10	*			
60	Little Pittsburg.	Utah.	2,000,000	400,000	5	14,000	Dec.	1897	.00¼
61	Lucky Bill.	Utah.	300,000	120,000	2.50	54,600	June.	1898	.01½
62	Marguerite, g.	Cal.	500,000	50,000	10	60,000	Apr.	1898	.10
63	Mayflower, g.	Colo.	1,000,000	1,000,000	1	*			
64	Merced, g.	Cal.	1,500,000	100,000	15	200,000	July.	1896	2.00
65	Mexican, g. s.	Nev.	10,080,000	100,800	100	3,154,640	May	1898	.15
66	Monarch, g.	Colo.	1,000,000	1,000,000	1				
67	Montreal.	Utah.	2,500,000	250,000	10	5,250	Nov.	1897	.00¼
68	¶Mt. Diablo s.	Nev.	5,000,000	50,000	100	145,000	Nov.	1896	.10
69	New Gold Hill.	N. C.	1,750,000	350,000	5				
70	New Viola, s. l.	Idaho	750,000	150,000	5	*			
71	North Banner, g. s.	Cal.	1,000,000	100,000	10	21,794	Oct.	1896	.02
72	¶North Belle Isle, s.	Nev.	10,000,000	100,000	100	523,074	July.	1896	.10
73	Northern Light, g.	Utah.	2,000,000	400,000	5	40,000	Mar.	1898	.10
74	Occidental Cons., g. s.	Nev.	10,000,000	100,000	100	513,652	Apr.	1898	.10
75	Ophir, g. s.	Nev.	10,000,000	100,000	100	4,685,840	Mar.	1898	.25
76	Opohonga.	Utah.	200,000	100,000	2	1,500	June.	1898	.01
77	Original Keystone, s.	Nev.	10,000,000	100,000	100	250.000	Mar.	1892	.10
78	Oro Cache, g. s.	S. D.	1,250,000	250,000	5	6,250	July.	1893	.00⅝
79	Overman, g. s.	Nev.	1,152,000	115,200	100	4,163,520	May	1898	.05
80	Peer, s.	Ariz.	10,000,000	100,000	100	215.000	July.	1894	.05
81	Peerless, s.	Nev.	10,000,000	100,000	100	410,000	July.	1894	.05
82	Pine Hill, g.	Cal.	1,000,000	100,000	10	30,000	July.	1897	.05
83	Potosi, g. s.	Nev.	11,200,000	112,000	100	2,094,400	Mar.	1898	.30
84	Puritan, g, s.	Colo.	1,500,000	150,000	10	*			
85	¶Quicksilver, pref., q.	Cal.	4,300,000	43,000	100	*			
86	¶Quicksilver, com. q.	Cal.	5,700,000	57,000	100	*			
87	Quincy, c.	Colo.	3,000,000	300,000	10				
88	Red Mountain, s.	Colo.	300,000	60,000	5	22,500	Mar.	1891	.12½
89	Rescue, g.	Nev.	100,000	10,000	10	4,000	June.	1898	.10
90	Reward, g.	Cal.	64,000	64,000	1	62,400	July.	1898	.02
91	Ridge, c.	Mich.	500,000	20,000	25	239,939	Feb.	1897	1.00
92	St. Mary, c.	Mich.	1,000,000	40,000	25	4.000	July.	1895	.05
93	Savage, g. s.	Nev.	11,200,000	112,000	100	1,118,600	Feb.	1898	.20
94	Seg. Belcher & M., g.s.	Nev.	10,000,000	100,000	100	350.000	Nov.	1897	.05
95	Sevier, g. s.	Utah.	1,250,000	250,000	5	50,000	April.	1897	.04
96	Sierra-Nevada, g. s.	Nev.	10,000,000	100,000	100	7,026,910	Feb.	1898	.20
97	Silver Age, g. s. l.	Colo.	2,000,000	200,000	10	*			
98	Silver Hill, s.	Nev.	10,800,000	108,000	100	2,003.400	May	1898	.05
99	¶Silver King, s.	Ariz.	10,000,000	100,000	100	279,858	June.	1897	.25
100	Silver Queen, c.	Ariz.	5,000,000	200,000	25	*			
101	Silver State, g.	Colo.	700,000	700,000	1	*			
102	Silver State, s. g. l.	Utah.	100,000	100,000	1	1,000	Sept.	1897	.00½
103	Siskiyou Con., s.	Cal.	2,000,000	200,000	10	46,000	Apr.	1898	.01
104	South Fork Con.	Utah.	50,000	50,000	1	5,000	Mar.	1898	.01
105	Star, g. s.	Utah.	1,000,000	200,000	5	1,000	Mar.	1898	.00½
106	Sunbeam Cons.	Utah.	250,000	250,000	1	20,625	June.	1898	.01
107	Tecumseh, c.	Mich.	1,000,000	40,000	25	40,000	July.	1897	1.00
108	¶Tenonj, g.	Colo.	1,000,000	1,000,000	1				
109	Tetro	Utah.	300,000	300,000	1	15,000	June.	1897	.01
110	Tombstone, g. s. l.	Ariz.	12,500,000	500,000	25	*			
111	Tornado Con., g. s.	Nev.	100,000	100,000	1	*			
112	Union Cons., g. s.	Nev.	10,000,000	100,000	100	2,595,000	June.	1898	.15
113	Utah Cons., s.	Nev.	10,000,000	100,000	100	455,722	Apr.	1898	.05
114	Victory. g. s.	S. D.	1,250,000	250,000	5	2,625	Nov.	1896	.00½
115	West Granite Mt., s.	Mont.	500,000	100,000	5				
116	Wolverine, c.	Mich.	1,500,000	60,000	25	180,000	Mar.	1895	1.00
117	Work, g.	Colo.	1,250,000	1,250,000	1				
118	World, g.	Colo.	1,500,000	1,500,000	1	*			
119	Yellow Jacket, g. s.	Nev.	12,000,000	120,000	100	6,168,000	May	1898	.20
120	Yellow Jacket.	Utah.	300,000	300,000	1	1,500	Dec.	1897	.00½

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. †The Deadwood previously paid $275,000 in eleven dividends and the Terra $75,000.
‡ Previous to the consolidation in August, 1884, the California had paid $31,320,000 in dividends and the Cons. Virginia $42,390,000. ‖ Dividends paid since consolidation.
§ Bodie, Bulwer and Mono transferred to Standard Cons., January, 1897. Previous to consolidation Bodie paid $1,677,572, Bulwer paid $190,000, and Mono $12,500.
¶ Dividends have not been paid in several years.
NOTE.—This table is corrected up to June 14. Correspondents are requested to forward changes or additions so as to reach us before the end of each month.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. Imported articles are subject to increase on account of war risk. This table is revised up to June 6th. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Review of Chemicals and Minerals.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls grains	lb.	$0.14
Powders	"	.08
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour	"	.03@.03½
Grains	"	.04½@.05½
Naxos flour	"	.03@.03½
Grains	"	.04½@.05½
Chester flour	"	.03@.03½
Grains	"	.04½@.05½
Peekskill flour	"	.01½
Grains	"	.02½
Crude, Kuluk, best	lg. ton	18.50
Levant, "	"	22.00
Naxos (Greek) best	"	25.00
Pumice Stone, powdered	lb.	.01½@.02
Lump	"	.04@.12
Rottenstone, ground	"	.02¾@.03
Lump, according to quality	"	.05½@.12
Rouge	"	.17@.30
Tripoli, prepared	sh. ton.	12.00
Acids—		
Acetic, ch. pure, 30%	lb.	.06½@.0
30% pure	"	2.65@.03
36% U. S. P.	"	.03½@.04
Glacial, 99.5%	"	.21@.23
Benzoic, English	oz.	.06¼@.06½
German	lb.	.49
Boracic, Cal. pure cryst.	"	.08
Powdered	"	.08½
Carbolic, cryst. in drums	"	.16@.17
Chromic, com'l	"	.25
Pure	"	.35
Chem. pure	"	1.75
Hydrochloric, 20°	100 lbs.	1.20@1.87½
Hydrofluoric, 30%	lb.	.03@.04½
48%	"	.05@.06
Chem pure	"	.10@.12
Phosphoric, English, st.p	"	.24
Sulphuric, 98%	"	.02
Chem. pure	"	.10@.12
Tartaric, cryst	"	.31½@.32
Powder	"	.32@.32½
Alcohol—94%	gal.	2.31@2.35
Refined wood, 95%	"	.75
97%	"	.80
Purified	"	1.20@1.50
Alum—		
Lump	100 lbs.	1.65
Ground	"	1.75
Chrome, com'l	"	3.25
Aluminum—		
Oxide, com'l	lb.	.60
Pure	"	.80
Chem. pure	"	1.00
Hydrated	"	.50
Sulphate, com'l	"	.01¼@.01¾
Ammonia—		
Aqua (in carboys), 16°	"	.02¼@.03¼
18°	"	.02¾@.05
20°	"	.03¼@.05¾
26°	"	.04¾@.06¼
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate	"	.07¼@.07½
Muriate, gran. (100%)	"	.09½
Lump	"	.07¾@.08
Gray	"	.04⅝
Nitrate, white, pure (99%)	"	.09
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05@.05½
Powdered	"	.05½@.05⅝
Oxide	"	.08¼@.16
Sulphuret	"	.16
Argols—80%	"	.04@.06
80%	"	.16@.16¾
Arsenic—		
White, powder	"	.04½@.05
Red	"	.07¾@.08
Asbestos—Building felt	"	.02¾
Mill board 40x40@42x44	"	.03¼
Mill board, irreg. sizes	"	.04
Sheathing, ⅛ in. or less	"	.02¾
Paper, fine	"	.06
Paper, fire and damp pf.	"	.04
Piston-rod pkg	"	.25
Fiber, long	sh. ton	20.00
Medium	"	30.00@40.00
Short	"	16.00@25.00
Pipe covering, magnesia fib., av. size	sq. ft.	.11
Asphaltum—		
Cuban, prime	lb.	.04@.05
Hard	"	.01¼@.01½
Trinidad, refined	"	.01½@.02
Bermuda, refined, f.o.b., South Amboy, N.J.	sh. ton	45.00
Egyptian, refined	lb.	.05½@.06½
Gilsonite, Utah, ordinary	sh. ton	35.00
Select	"	60.00
Barium—Carbonate, lump, 92@94%	lg. ton	25.25
96@98%	"	29.00
Precipitated, 98%	sh. ton	38.00@45.00
Chem. pure	lb.	.10
Chloride, com'l	100 lbs.	1.60@2.00
Chem. pure cryst	lb.	.05
Chlorate	100 lbs.	.29
Nitrate	lb.	.05½@.06
Nitrite, com'l	"	.05⅞
Oxide, com'l, hydrated, cryst	"	.18@.22
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Chem. pure	"	1.50
Anhydrus, com'l pure	"	.50
Sulphate (Blanc fixe)	"	.02¼@.02¾
Barytes—Crude, No. 1	sh. ton	9.00@10.00
No. 2	"	8.00@8.25
No. 3	"	7.75@8.00
American, floated	"	12.50@18.00
Foreign, floated	"	18.00@20.00
Bauxite—Georgia, f.o.b. cars, first grade	lg. ton	3.27@3.50
Second grade	"	2.50@2.62
Benzole— 90%	gal.	1.00@1.10
Bismuth—Oxide, hydr.	lb.	2.25@2.65
Bitumen	"	.04½
Bone Ash	"	.02¾@.03½
Borax—		
Cal., refined, cryst.	lb.	.07@.07¼
Lump	"	.07@.07¼
Bromine—		
Com'l, at works	"	.45
Cadmium—Sulphide	"	3.25@4.00
Calcium—		
Acetate, brown	100 lbs	1.25@1.50
Gray	"	1.75@2.00
Pure white	lb.	.08@.09
Carbonate, ppt.	"	.10
Chem pure	"	.75
Phosphate, ppt.	"	.20
Sulphite	"	.05
Carbide, prepared	"	.01@.03
Cement—		
Portland, Am., 400 lbs.	bbl.	1.80@2.00
Foreign	"	1.75@2.50
"Rosendale," 300 lbs.	"	.75
Sand cement, 400 lbs.	"	1.85@1.95
Slag cement, imported	"	1.65
Ceresine—Orange	lb.	.11
Yellow	"	.10@.11
White	"	11¼@.13
Chalk—		
Com'l, lump	sh ton	2.00@2.25
English, ppt.	lb.	.04@.06
French, lump	100 lbs.	.30
Powdered	"	.35
Chlorine—		
Liquid	lb.	.25
Chrome Ore—		
(50% chrome) ex ship	lg. ton	21.25@23.50
Clay, China—Delivered, Low grade	sh. ton	13.00
Medium grade	"	15.00
Best grade	"	17.50
Fire, ground	lg. ton	4.00@5.00
Cobalt—		
Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide, black	"	1.76
Gray	"	2.25
Smalt	"	.26@.30
Chem. pure	"	5.00
Sulphate	"	.85
Copperas	100 lbs.	.60@.67½
Copper—		
Acetate, com'l	lb.	.16@.20
Carbonate	"	.16
Chloride	"	.25
Nitrate, crystals	"	.35@.40
Oxide, black	"	.13@.20
Ppt. pure	"	.40
Red	"	.13@.16
Ppt, pure	"	.35@.40
Sulphate, com'l	"	.03⅝@.03¾
Chem. pure	"	.10
Cryolite	"	.08½
Explosives—		
Blasting powder, A	"	.08@
Blasting powder, B	"	.05@.05¾
"Rackarock," A	"	.25
"Rackarock," B	"	.18
Judson R.R. powder, by carload	"	.10
Dynamite, (40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.23
Glycerine, for nitro (32 2-10° Be.)	"	.11
Nitro-Benzole	"	.14@.15
Feldspar—		
Ground	sh. ton	7.00@7.75
Flint—(See Silica).		
Fluorspar — Domestic, lump	"	7.00
Gravel	"	6.00@7.00
Crushed	"	7.50
Ground	"	10.00@12.00
Extra fine ground	"	11.00@13.50
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—		
Lump	100 lbs.	.75@.90
Powdered	"	.81½@.90
Graphite— (See Plumbago).		
Gypsum—		
American, ground	sh. ton	4.25
English	"	14.00
French	"	16.00
Infusorial Earth—	"	20.00@.40 00
Iodine—		
Crude	lb.	2.55
Resublimed	"	3.00@3.05
Iron—		
Chromate, powdered	"	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01@.01½
True	"	.03½@.04½
Oxide	"	.02@.12
Scale	"	.01@.03
Sulphide (antimony slag)	"	.05@.06
Kaolin— (See Clay, China).		
Lead—Acetate. White, broken	"	.07¼@.07½
Com'l, broken	"	.05@.05¼
Chromate	"	.20@.30
Nitrate, com'l	"	.06½@.06¾
C. P.	"	.35
Lime—		
Building, about 250 lbs.	bbl.	.75@1.00
Fertilizing	"	.50@.75
Chemical marble	"	1.00@1.25
Hydrated	lb.	.02@.03
Flour	"	.01½
Magnesite—		
Crude, lump 94%	sh. ton	7.00@7.50
Calcined	"	14.00@25.00
Powdered	"	25.00@30.00
Calcined	"	30.00@35.00
Magnesium—		
Metallic, ingots (Ger).	kg.	5.95@6.90
Powdered (Ger.)	"	6.90
Ribbon or wire (Ger.)	"	9.52
Carbonate	lb.	.01¾@.02
Chloride, com'l	"	.05
Manganese—		
Crude, powdered, 70@75% binoxide	lb.	.01¼@.01½
75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.03¼@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%	unit	.21@.22½
Sulphate, powdered	"	.25
Pure cryst	"	.60
Marble—Flour	sh. ton	8.00
Mercury—		
Bichloride	lb.	.57@.59
Bisulphate	"	.59
Red, ppt.	"	.79@.81
White, ppt.	"	.84@.86
Mica—Ground	"	.03@.04½
Sheets, according to size and quality.		
Mineral Wool—Rock	"	.01¼@.01¾
Monazite— 92%	sh. ton	140.00
Nickel—		
Oxide, black, No. 1	lb.	.90
No. 2	"	.45
Green, No. 1	"	.80
No. 2	"	.45
Oils—Black, reduced 29 gr., 25@30%	gal.	.06½@.07
Black reduced 29 gr. 15 cold test	"	.07½@.08
Black reduced 29 gr. zero	"	.09½@.11½
Black reduced summer	"	.06@.06½
Smith's Ferry, 33@34 gr.	"	.07½@.08½
West Virginia, nat'l 29 gr	"	.22@.24
Cylinder, dark steam ref	"	.07½@.12½
Dark filtered	"	.10½@.15½
Light filtered	"	.12½@.15
Extra cold test	"	.20½@.24½
Gasoline, 86°	bbl.	13.00@14.00
88°	"	15.00@16.00
90°	"	18.00@19.00
Neutral filtered, lemon, 33@34 gr	gal.	.12½@.18
White, 33@34 gr	"	.20½@.22½
Wool grade, 32 gr	"	.10½@.14
Naphtha, crude, 68@72°	bbl.	5.50
70°	"	6.00
Petroleum, refined, bulk	"	3.25
Paraffine, high viscosity	gal.	.20@.25
23½@24 gr	"	.08¾@.09
25 gr	"	.07¾@.08
28@32 gr	"	.06½@.06¾
Red No. 1	"	.08¼@.08¾
No. 2	"	07¾@.08¼
Linseed, domestic raw	"	.44@.45
Boiled	"	.46@.47
Calcutta, raw	"	.54
Ozokerite—Imported	lb.	.07½@.08½
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	.27@.28
Chrome, green	"	.05@.15
Yellow	"	.10@.12
Lampblack—Com'l	"	.03@.05
Refined	"	.08@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.30
Litharge, Am. powd.	"	.04¾@.05
English flake	"	.06¾@.07
Metallic, brown	sh. ton	18.00@20.00
Red	"	18.00@20.00
Ocher, American	sh. ton	8.00@15.00
Foreign, washed	lb.	.01@.05
Orange mineral, Am.	"	.06½@.07
Foreign	"	.07½@.10½
Paris green, pure	"	.14½@.21½
Red lead, American	"	.05½@.05½
Foreign	"	.06½@.07
Shellac, as per quality	"	.15@.24
Turpentine, spirits	gal.	.28@.28½
Ultramarine	lb.	.03@.25
Vermilion, Amer. lead.	"	.14@.16
Quicksilver	"	.63@.67
Chinese	"	.80@.90
English, imported	"	.70@.90
Artificial	"	.10@.20
White lead, Am., dry	"	.04½@.04¾
In oil	"	.05½@.05¾
English, in oil	"	.07½@.08¼
Whiting, common	100 lbs.	.35@.40
Gilders	"	.45@.50
Zinc white, Amer., dry.	lb.	.03¾@.04½
In oil	"	.05¼@.06¼
Foreign, red seal	"	.06¼@.07¼
Green seal	"	.07@.08½
Pearl Ash	lb.	.04@.05
Pitch—Coal tar	bbl.	1.70@1.75
Platinum—Chloride	oz.	9.00
Plumbago — American, pulverized, f. o. b., Providence, R. I.	sh. ton	20.00@40.00
Lump	"	10.00
German, lump	100 lbs.	.95
Pulverized	lg. ton	16.50
Ceylon, crude	lb.	.01¼@.04½
Pulverized	"	.02@.05
Potash—Caustic	"	.03⅞@.04½
Potassium—		
Metallic, in Germany	kg.	17.85
Acetate, com'l.	lb.	.13@.15
Bicarbonate cryst	"	.09@.09½
Bichromate	"	.10@.10¼
Bromide	"	.44@.45
Carbonate	"	.04@.05½
Cyanide (98@100%)	"	.28@.30
Nitrate, double refined.	"	.07¼@.07½
Chem. pure cryst	"	.07½
Permanganate, pure cr.	"	.17@.17½
Chem. pure	"	.34
Sulphide, com'l	"	.16
Chem. pure	"	1.00
Pyrites—		
Rough kln, Am., iron (50%)—(unbroken)	unit	.09@.11¼
Smalls	"	.08@.10
Spanish, high grade, cupreous	"	.....
Spanish, high grade, non-cupreous	"	.....
Iron, smalls	"	.....
Washed pyrites	"	.09@.11
Quartz—(See Silica).		
Salt—		
Domestic	sh. ton	4.40@5.90
Saltpeter—		
Crude	lb.	.05½@.06
Silica—		
Water ground	sh ton	12.00
Ground quartz	"	6.75@8.00
Lump quartz	"	2.50@4.00
Silver—		
Chloride	oz.	.60@.90
Nitrate	"	.40@.41¼
Oxide	"	.85@1.10
Slate—		
Ground	lb.	.02@.03
Sodium—Metallic	"	.75
Acetate, com'l	"	.03¼@.05¾
Chem. pure	"	.05@.05¾
Bichromate	"	.08@.08½
Bromide	"	.47@.48
Carbonate	"	.01
Fluoride	"	.07½@.10
Hyposulphite	100 lbs.	1.65@1.75
Nitrite	"	.07½@.07¾
Phosphate	lb.	.02⅞@.03½
Silicate, pure powder	"	.04@.10
Com'l, lumps	"	.05
40°	"	.01¼@.01½
Sulphate	100 lbs.	.55@.65
Sulphide	lb.	.02@.03
Tungstate, com'l (retail)	"	.35
Pure	"	.50
Strontium—		
Carbonate, precipitate	"	.13@.14
Nitrate	"	.08½@.09
Roll	"	1.60
Sublimed	"	1.90
Pure, precipitated	lb.	.12
Chloride	"	.20@.35
Sulphur—Roll	100 lbs.	2.37½@2.50
Flour	"	2.90@3.00
Talc—American, No. 1	sh. ton	15.00@15.50
No. 2	"	11.50@12.00
French	100 lbs.	.80@1.50
Italian	"	1.50
Tin—Chloride	lb.	.11@.13
Crystals	"	.10¼@.10½
Oxide, white, ch. pure	"	.20@.25
Uranium—Oxide	lb.	2.00@2.20
Zinc—Metallic, ch. pure	"	.06¾
Carbonate	"	.13
Chloride, gran	"	.09
Dust	"	.06¾.08
Sulphate	"	.02@.02½

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	Cust. Meas.	Price.
Argon—Spectrum (N.Y.)	tube.	$5.00
Barium—Amalgam	grm.	1.19
Electrol	"	5 71
Beryllium—Powder	kg.	5.95
Crystals	"	9.04
Boron—Amorphous, pure	"	.59
Crystals, pure	"	1.43
Calcium—Electrol	"	4.28
Cerium—Nitrate (N. Y.)	oz.	.25
Chromium—Fused	kg.	7.14
Com'l pure powder	"	1.90
Chem. pure cryst	grm.	.19
Cobalt—(98@99%)	kg.	5.47@5.71
Pure	"	30.94
Didymium—Powder	grm.	3.81
Erbium	"	3.09
Gallium	grain	6.15
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Helium—		
Spectrum (N. Y.)	tube.	6.00
Indium	grm.	4.05
Iridium—	"	1.19
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Lithium	"	2.38
Molybdenum—Com'l (95%)	kg.	2.86
Fused, electrol	100 grms.	15.47
Niobium	grm.	3.87
Osmium	"	.83
Palladium—Sponge	kg.	428.00
Sheet and wire	"	761.00
Rhodium	grm.	3.57
Rubidium—Pure	"	4.76
Ruthenium	"	1.55
Selenium—Com'l powder	kg.	26.18
Sublimed powder	"	35.70
Sticks	"	28.56
Silicon—Amorphous	100 grms.	7.14
Crystals, pure	"	13.09
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Met. ch. p.	100 grms.	13.09
Powder	"	9.52
Thallium	kg.	29.75
Thorium (N. Y.)	lb.	10.00
Titanium	grm.	.71
Uranium—Fused	"	.60
Powder	"	.48
Vanadium—Fused	"	1.43
Wolfram—		
Com'l (95@98%)	kg.	1.43
Fused	100 grms.	15.47
Powder, pure	kg.	4.76
Yttrium	grm.	3.33
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71

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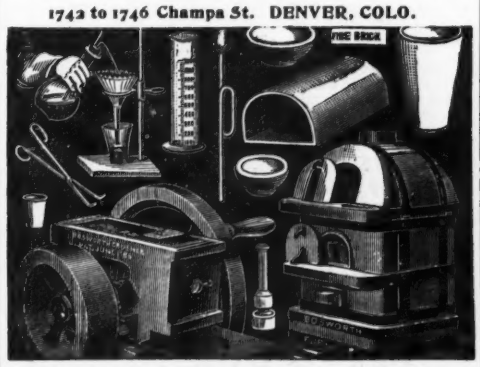

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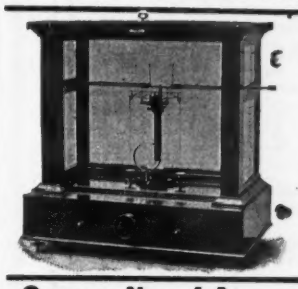

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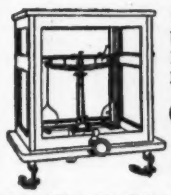

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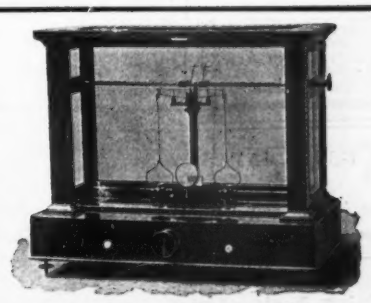

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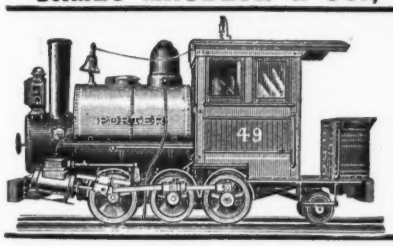

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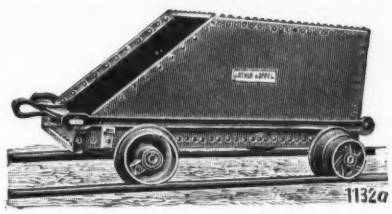

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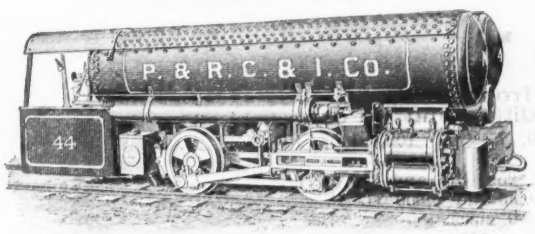

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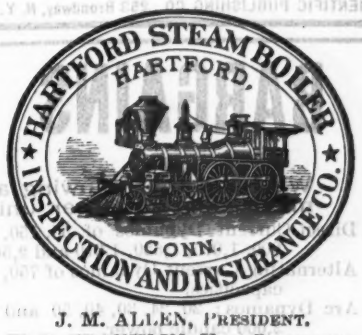

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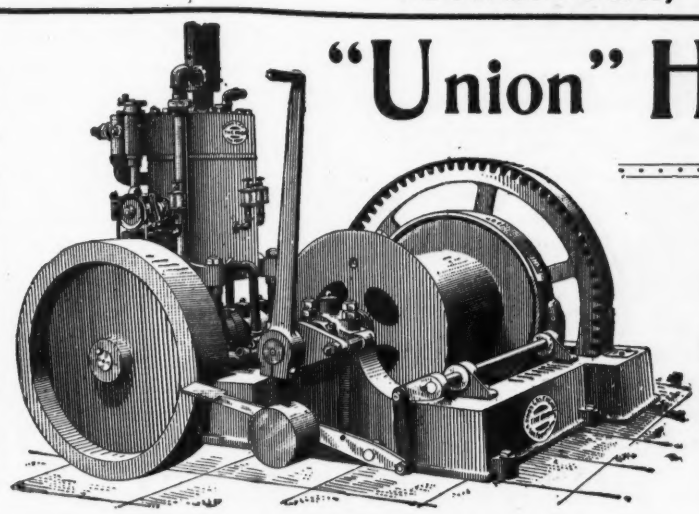

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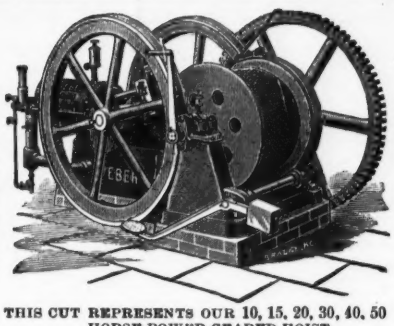

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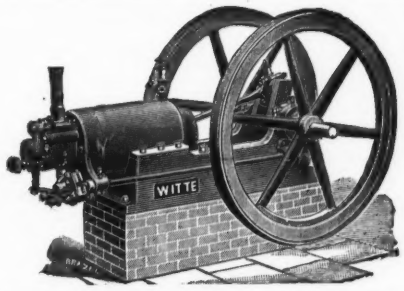

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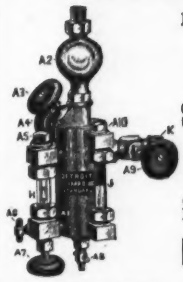

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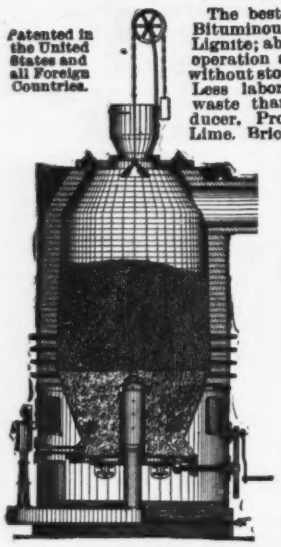

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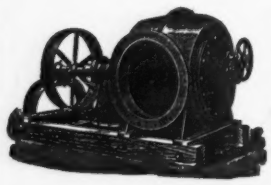

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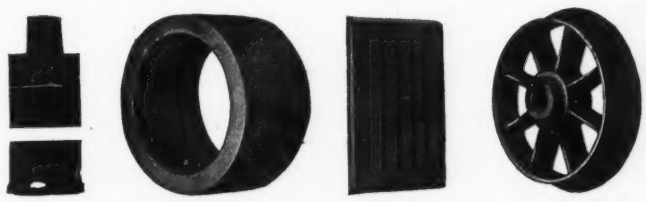

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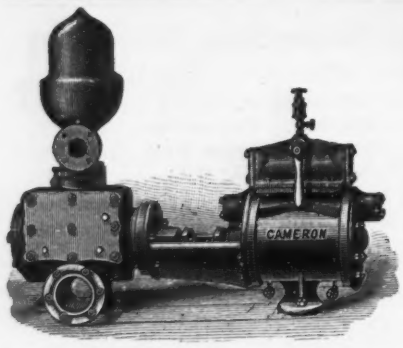

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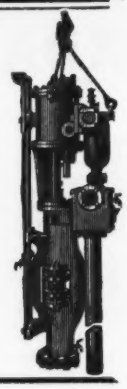

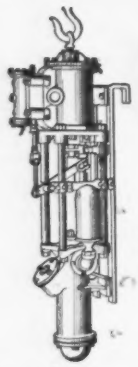

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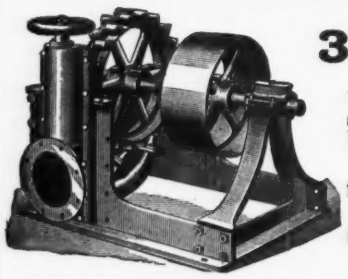

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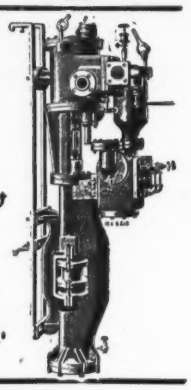

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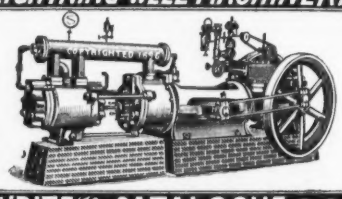

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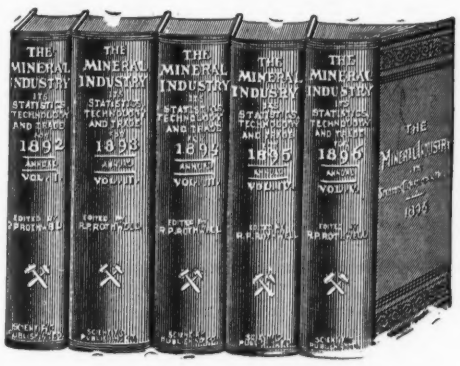

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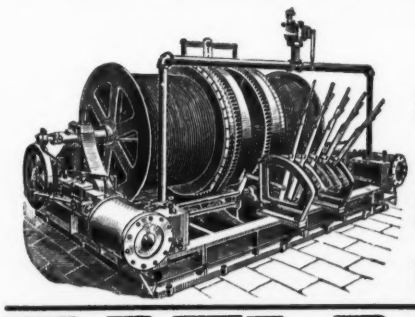

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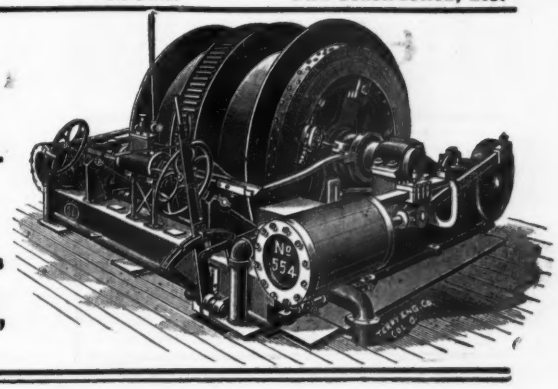

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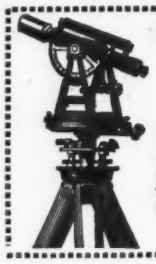

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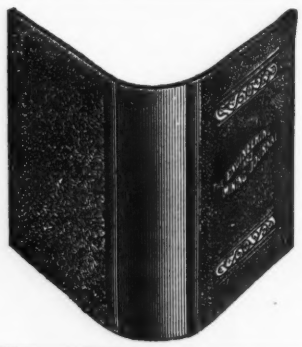

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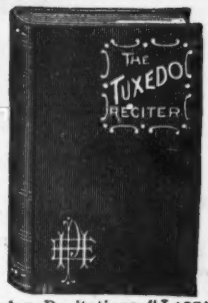

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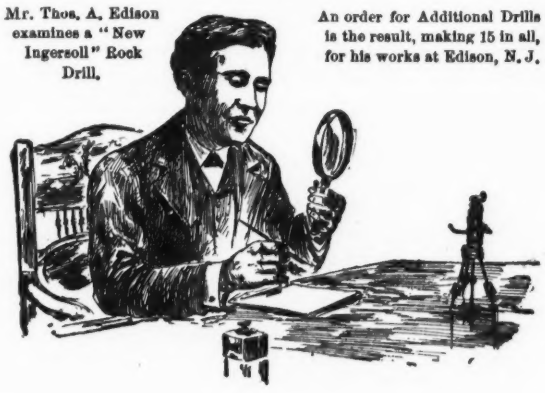

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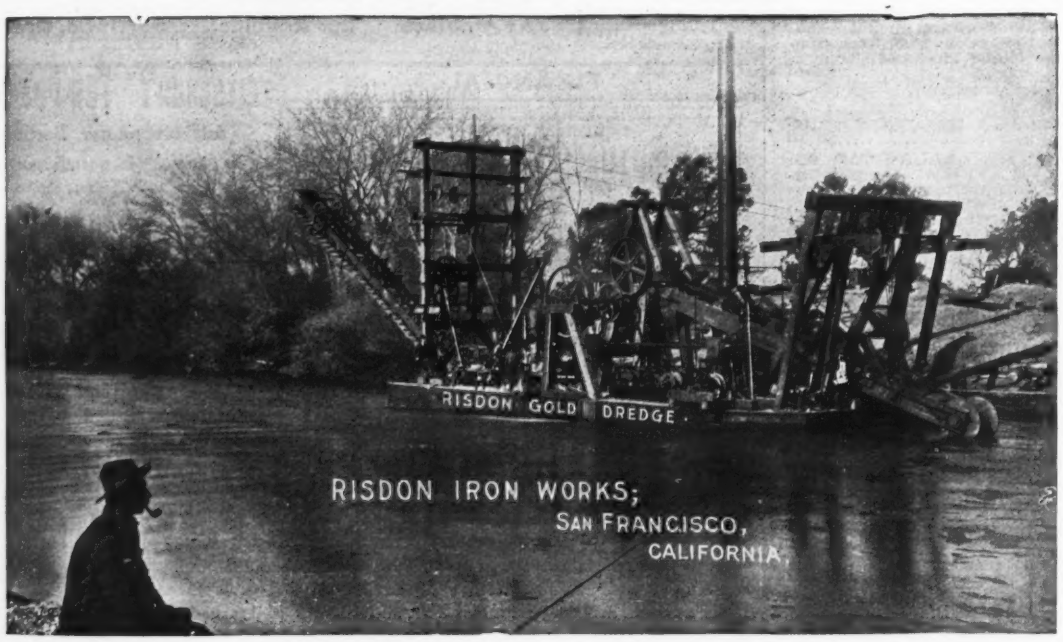

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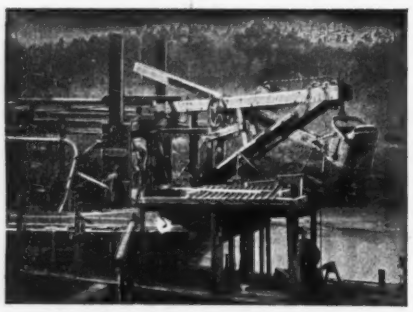

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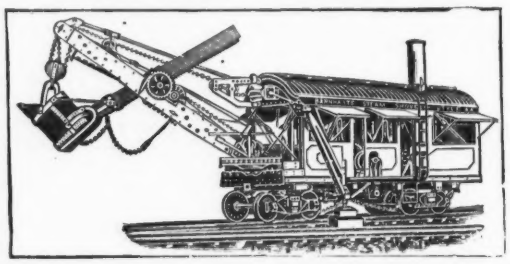

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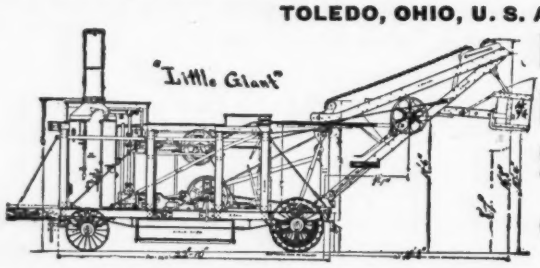

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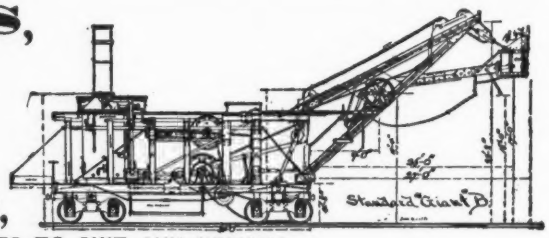

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Billin, C. E., & Co., Chicago, Ill.
Blake, T. A., New Haven, Conn.
Bradley Pulverizer Co., Boston, Mass.
Bucyrus Co., So. Milwaukee, Wis.
Bullock, The, M. C., Mfg. Co., Chicago.
Colorado, The, Iron Works Co., Denver.
Davis, F. M., Iron Works Co., Denver.
Denver, The, Eng. Works Co., Denver.
Dixon Drill Co., Denver.
Englebach Mach. Mfg. Co., Denver.
Fairbanks, Morse & Co., Chicago.
Fraser & Chalmers, Chicago, Ill.
Garretson, O. S., Buffalo, N. Y.
Gates Iron Works, Chicago, Ill.
Gillette-Herzog Mfg. Co., Minneapolis.
Hammond Mfg. Co., Portland, Ore.
Hendrie & Bolthoff Mfg. Co., Denver
Hodge, C. J., Houghton, Mich.
Jackson Drill & Mfg. Co., Denver.
Ingersoll-Sergeant Drill Co., New York.
Jeffrey, The, Mfg. Co., Columbus, O.
Koppel, A., New York.
Krom, S. R., Jersey City, N. J.
Krupp, Fried, Magdeburg-Buckau, Germany.
Lambert Hoisting Engine Co., Newark.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Machinery Co., Chicago, Ill.
McCully, R., Philadelphia, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Mine & Smelter Supply Co., Denver, Colo.
Montgomery, J. H., Mach'y Co., Denver.
Moore, S. L., Sons Co., Elizabeth, N. J.
Motley & Co., T. N., N. Y.
Nelsonville, The, Foundry & Machine Co., Nelsonville, O.
Nichols Chemical Co., New York.
Norwalk Iron Works Co., So. Norwalk, Conn.
Pollock, W. B., & Co., Youngstown, O.
Rand Drill Co., New Ycrk, N. Y.
Raymond, The, Bros., Impact Pulverizer Co., Chicago, Ill.
Risdon Iron Works, San Francisco, Cal.
Rogers Boat, Gauge & Drill Co., Gloucester City, N. J.
Snow Steam Pump Works, Buffalo, N. Y.
Stedman's Foundry & Machine Works, Aurora, Ind.
Sterling Co., Chicago, Ill.
Sullivan Machinery Co., Chicago, Ill.
Sturtevant Mill Co., Boston, Mass.
Union Gas Engine Co., San Francisco.
Union Iron Works, San Francisco, Cal.
Vulcan Iron Works, San Francisco, Cal.
Vulcan Iron Works, Toledo, O.
Walburn-Swenson Co., Chicago, Ill.
Weber Gas & Gasoline Engine Co., Kansas City.
Webster, Camp & Lane Machine Co., Akron, O.
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.
Witte Iron Works Co., Kansas City, Mo.

Magnolia Metal.

Magnolia Metal Co., New York.

Manganese Steel.

Taylor Iron & Steel Co., High Bridge, N. J.

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Bath, Henry, & Son, London, Eng.
Besly, C. H., & Co., Chicago, Ill.
Bond Vivian & Co., New York.
Bridgeport Copper Co., Bridgeport, Conn.
Elliott's Metal Co., Burry Port, So. Wales.
Eureka, The, Co., San Francisco, Cal.
James & Shakespeare, London, Eng.
Johnson, Matthey & Co., London, Eng.
Lambert's Wharfage Co., Swansea, Eng.
Lewisohn Bros., New York, N. Y.
Matthiessen & Hegeler Zinc Co., La Salle, Ill.
Mathison & Co., New York, N. Y.
Montana Ore Purchasing Co., Butte,
Nichols Chemical Co., New York.
Orford, The, Copper Co., New York, N. Y.
Pass, C., & Son, Bristol, Eng.
Phelps, Dodge & Co., New York, N. Y.
Picher Lead Co., Chicago, Ill.
Raymond Lead Co., Chicago, Ill.
Spanish-American Iron Co., New York.
Stern, Julius, & Co., Nuremburg, Germany.
Vivian, Younger & Bond, London, Eng.

Metallurgical Works and Ore Purchasers.

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Balbach Smelting & Refining Co., Newark, N. J.
Baltimore, The, Copper Works, Baltimore,
Bridgeport Copper Co., Bridgeport, Conn.
Canadian, The, Copper Co., Cleveland, O.
Consolidated Kansas City Smelting & Refining Co., Argentine, Kan.
Elliott's Metal Co., Burry Port, So. Wales.
Gold and Silver Extraction Co., Denver.
Ledoux & Co., New York.
Matthiessen & Hegeler Zinc Co., La Salle, Ill.
Montana Ore Purchasing Co., Butte,
Nichols Chemical Co., N. Y.
Orford, The, Copper Co., New York.
Pennsylvania Salt Mfg. Co., Phila., Pa.
Ricketts & Banks, New York, N. Y.
Russell Process Co., Park City, Utah.

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Sturtevant Mill Co., Boston, Mass.

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Denver, The, Eng. Works Co., Denver,
Davis, The F. M., Iron Works Co., Denver.
Fairbanks, Morse & Co., Chicago.
Gillette-Herzog Mfg. Co., Minneapolis.
Hendrie & Bolthoff Mfg. Co., Denver.
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Nelsonville, The, Foundry & Machine Co., Nelsonville, O.

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Ludlow-Saylor Wire Co., St. Louis.

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Arizona Copper Co., Clifton, Ariz.
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Eureka, The, Co., San Francisco, Cal.
Mountain Copper Co., New York.
Smuggler-Union Mining Co., Denver.

Muck Bars.

Bethlehem Iron Co., So. Bethlehem, Pa.

N.

Nickel.

Canadian, The, Copper Co., Cleveland, O.
Orford, The, Copper Co., New York, N. Y.

O.

Oilers.

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Detroit Lubricator Co., Detroit, Mich.

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Publications.

American, The, Fertilizer, Philadelphia,
British, The, Columbia Mining Record, Victoria, B. C.
Denver Republican, Denver, Colo.
El Minero Mexicano, City of Mexico, Mex.
Indian Engineering, Calcutta, India.
Iron & Coal Trades Review, London.
McNeill's Code, London, Eng.
Mining, The, Journal, London, Eng.
Mining, The, Investor, Colorado Springs,
Ontonagon, The, Miner, Ontonagon, Mich.
Scientific, The, Publishing Co., N. Y.
South, The, African Mining Journal
Zeitschrift fur Praktische Geologie, Berlin, Germany.

Pumps.

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Billin, C. E., & Co., Chicago, Ill.
Cameron, A. S., Steam Pump Works, N.Y.
Clayton Air Compressor Works, N. Y.
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Fairbanks, Morse & Co., Chicago.
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Jeanesville Iron Works Co., Denver, Colo.
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Stilwell-Bierce & Smith-Valle Co., The, Dayton, O.
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Pyrites.

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Q.

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R.

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Weber Dredge Co., Kansas City, Mo.

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Baltimore Copper Works, Baltimore, Md.
Bridgeport Copper Co., Bridgeport, Conn.
Consolidated Kansas City Smelting and Refining Co., Argentine, Kan.
Elliott's Metal Co., Burry Port, So. Wales.
Mathison & Co., New York, N. Y.
Nichols Chemical Co., New York.
Orford, The, Copper Co., New York, N. Y.
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Moore, S. L., & Son's Co., Elizabeth, N. J.
Pollock, W. B., & Co., Youngstown, O.
Robinson & Orr, Pittsburg, Pa.
Taylor Iron & Steel Co., High Bridge, N. J.

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Denver Eng. Works Co., Denver.
Fairbanks, Morse & Co., Chicago.
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W.

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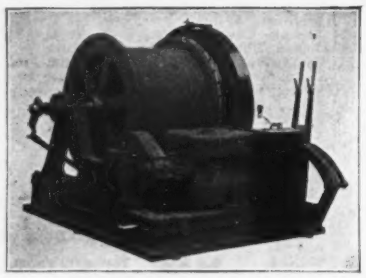

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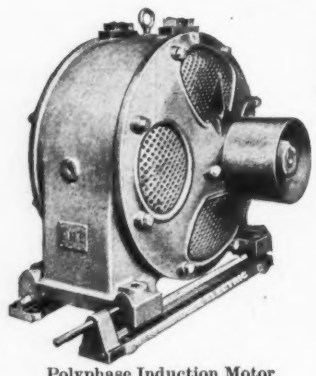

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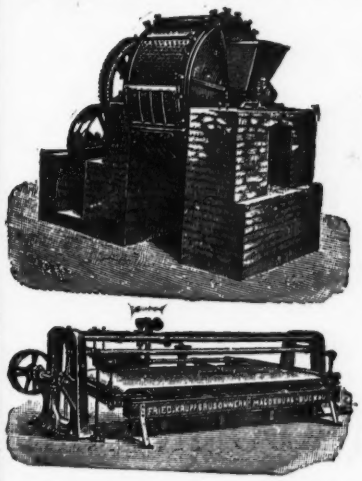

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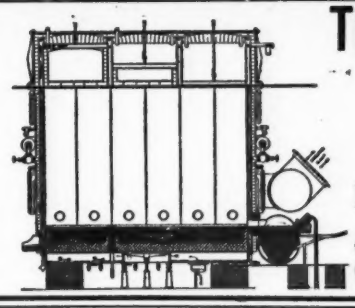

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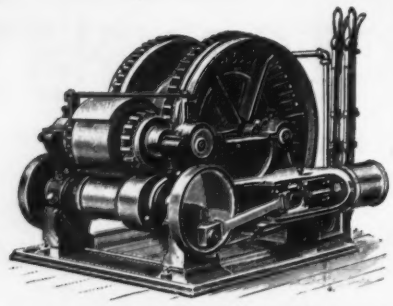

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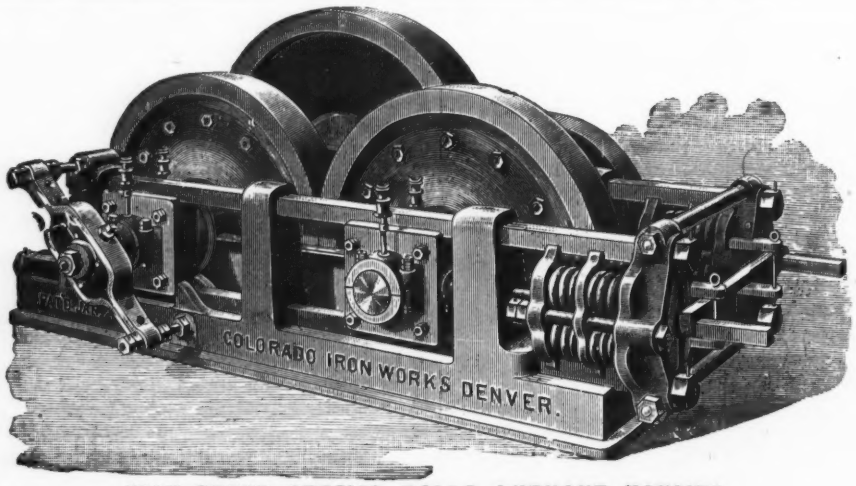

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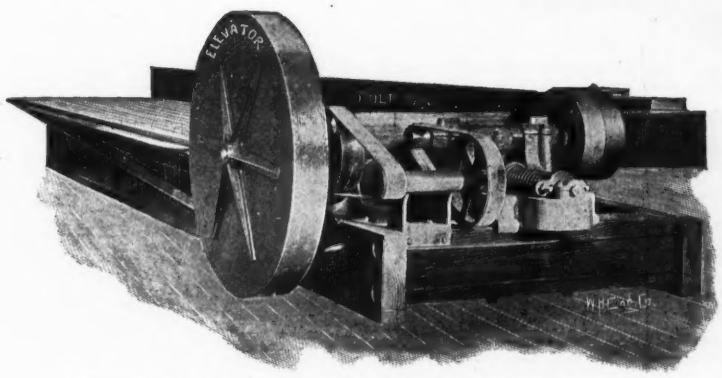

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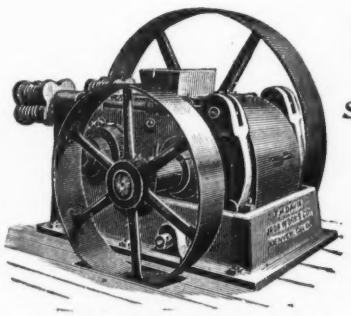

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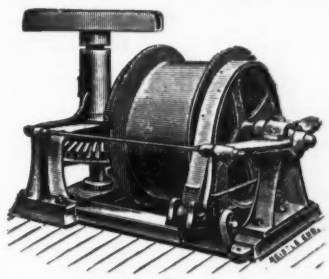

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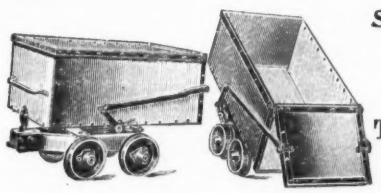

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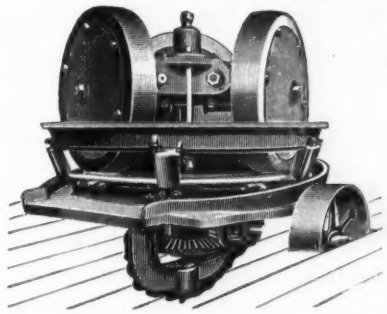

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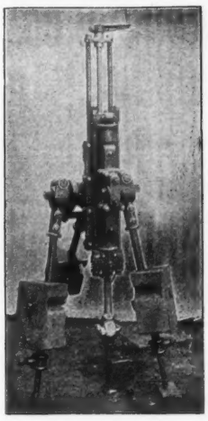

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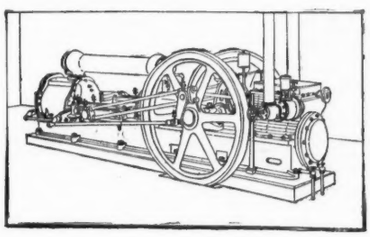

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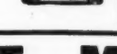

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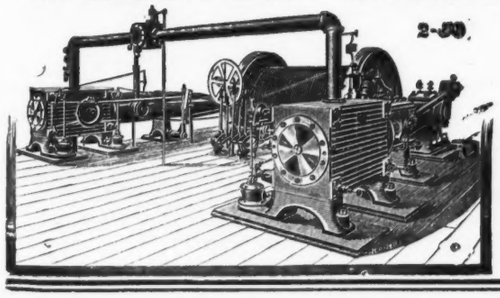

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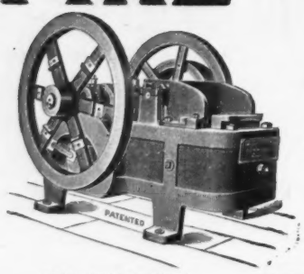

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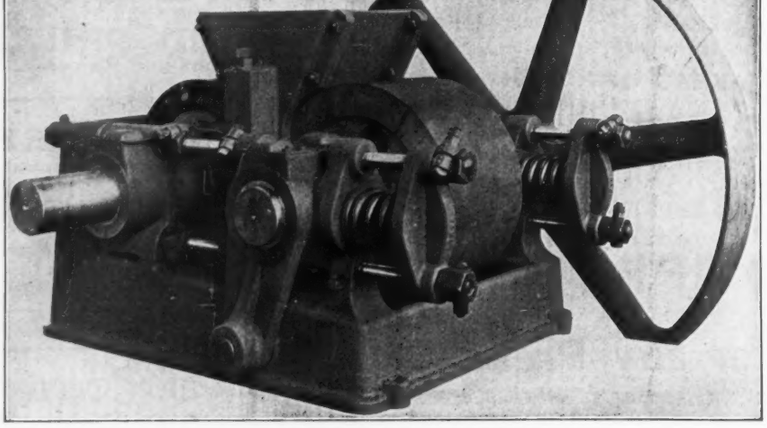

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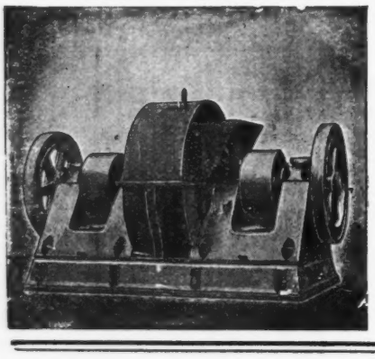

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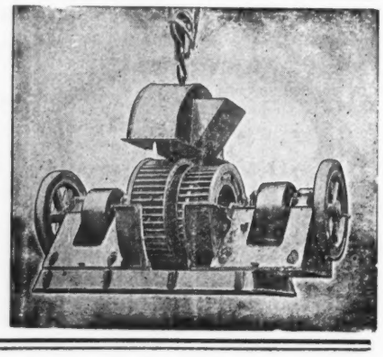

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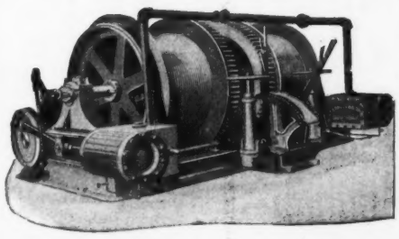

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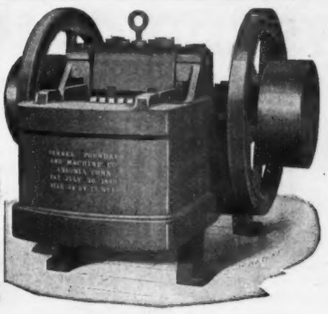

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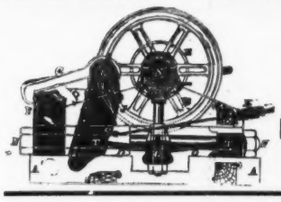

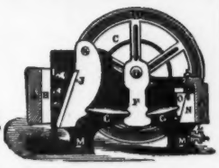

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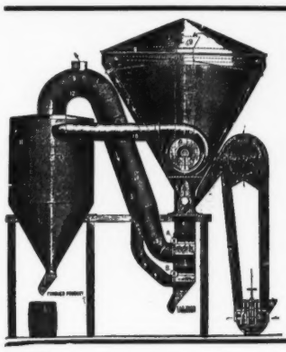

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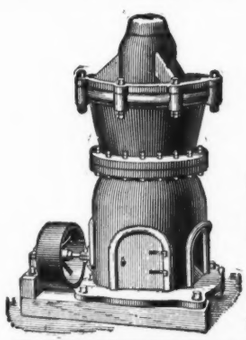

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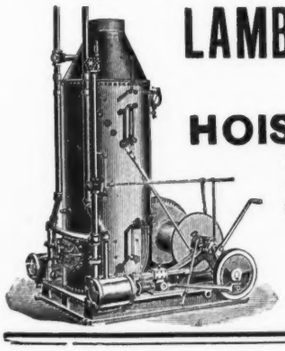

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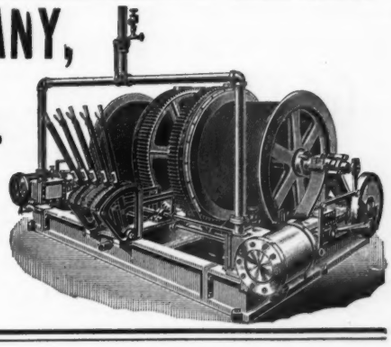

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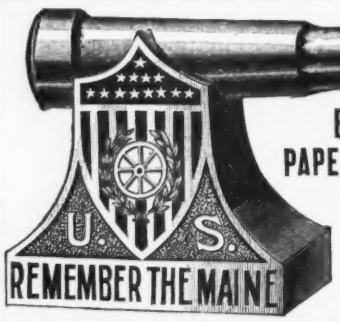

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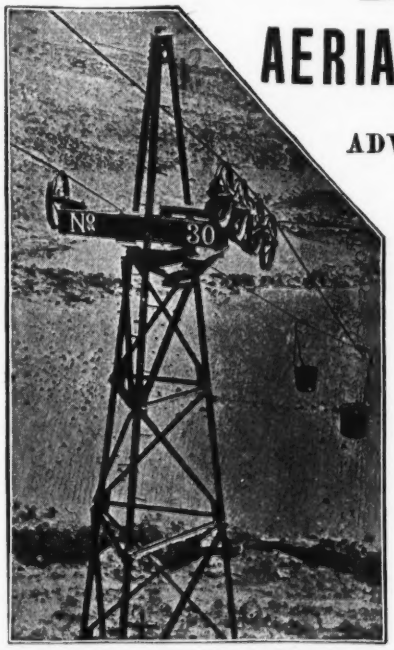

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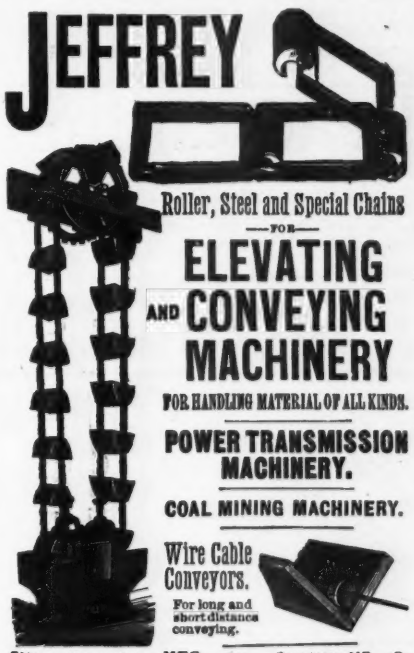

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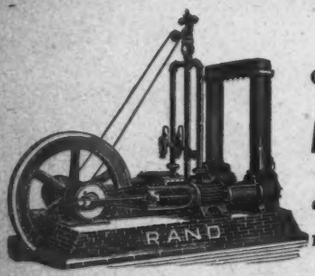

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